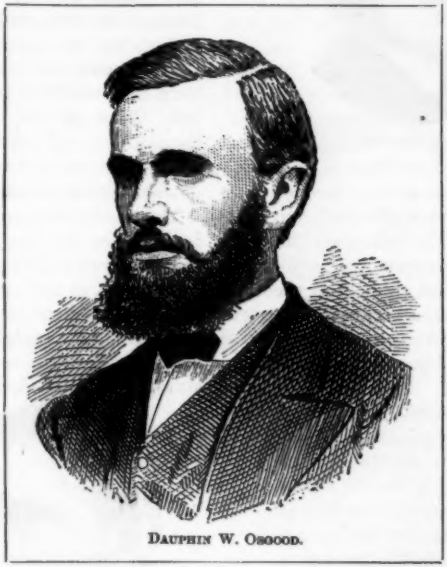
THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 82. 1886.

NUMBER 2.] *February*, 1886. [WHOLE NO. 568.



DAUPHIN W. OSGOOD.

MEDICAL MISSIONARIES.

DAUPHIN W. OSGOOD; WILLIAM ELMSLIE; BOUDINOT C. ATTERBURY; GEORGE D. DOWKONTT; WILLIAM R. SUMMERS.

IT is a matter of gratification to bear witness to the prosecution of a good work by good men, and the movement that is the inspiration of this article is worthy of such a characterization. Referring the reader to the portraits we first briefly sketch them in the following terms:

In the head and face of Dauphin W. Osgood, we read sincerity, self-poise, and consciousness of power. The head is broad above and backward from the ears, showing courage, executiveness, energy, and power to struggle with difficulty and opposition.

The head rises at the crown, showing dignity, self-reliance, ambition, integrity and determination. In the middle top-head Veneration and Spirituality are well marked.

The intellect is of an incisive, specific and critical character, enabling him to acquire knowledge and apply it definitely. His knowledge of character should have been excellent, and his influence

among men easy and effective. A good combination of morality, aspiration, affection and force.

WM. ELMSLIE.

This portrait of William Elmslie indicates power, harmony and force of character, yet so held and directed as to make it effective. The massive forehead evinces predominance of meditation, power to plan and think and theorize; ability to look ahead and lay out work, and also to judge character and motive so as to mold and govern men easily and implicitly.

The Perceptives are large enough to give quickness of observation and to enable him to gather facts which the reasoning and planning talent requires to serve as a basis for future action. Being broad in the region of the temples, he has considerable of the devising, contriving, organizing quality.

He is large in the department of imagination and whatever is æsthetical. He is a natural inventor, clearly sees the ways and means requisite to the consummation of results. The top-head is broad and long as well as high, showing strong moral sentiment, quick and abiding sympathy, faith in well-directed effort and an insight which promises results in the future. He has prudence, energy, ambition, thoroughness, natural financial skill, and ability to make the best of circumstances by making everything he possesses subserve his plans in a successful manner.

An intense thinker, an earnest worker, and with too much brain for the body, he was always liable to exhaust his vitality through the excessive action of the brain.

Dr. Dowkontt possesses two natures in one; the intellect of his mother which gives uncommon quickness of perception and intuition, and the ability to know everything at a glance; that involves the forehead and takes in a little more than that which is not covered by the hair. That part of the head looks like the mother's, and it gives him his mother's quick instincts and instantaneous powers of observation and decision.

The middle section of the head which is shown by the length of a line drawn from one ear to the other, over the top, and including the strong nose, are from the father's side of the house. He knows like his mother; he drives like his father. He has Firmness enough to make him sturdy and inclined to oppose people, or

GEORGE D. DOWKONTT.

subjects not in harmony with his opin-

ions and purposes. He knows no such word as fail, and naturally adopts responsibilities, and pushes the cause with a relentless earnestness as long as he deems it the right thing to be done. He is honest, just, self-reliant; believes in himself, is watchful, inclined to direct work and prosecute the cause in which he engages.

He has Combativeness and Destructiveness enough to engage in anything that requires push and energy, courage and fortitude. That under lip, as dimly seen through the beard, means, "I said it and it must be done." "I have decided and who shall disturb the decision?" "I have started, I am bound to win. Oppose me who can!"

There is a fine quality, sensitiveness and susceptibility and even tenderness, when tenderness is called for; but there is an energetic self-reliance, a practical and positive type of thought and character which means leadership, superintendence, self-help and the tendency to help everybody else.

The portrait of Dr. Atterbury indicates a harmonious organization; the elements of health and mental balance adapting him to achieve success in any department to which he may devote himself. He is naturally an easy worker; glides smoothly into that which he has occasion to do, and makes everything work at the same time harmoniously.

He is a practical observer, gathers knowledge from all his surroundings, remembers what he sees, hears and experiences. He is ingenious; turns his hand to anything with facility. He is a natural mechanic, a good financier; will make anything a success financially that has in it the elements of success, for he will find them, apply them and push them.

He has force of character; his head is broad from side to side, indicating earnestness, executiveness, a full share of policy and prudence, and as we have said, ingenuity and financial ability. He has the talents of a mechanic, a scientist, a physician, a surgeon, an accountant, an historian. His social and sympathetical elements are strongly marked, but he will be chiefly known as a bright, ready, easy worker, with power of adaptation and ability to push the cause he adopts.

The whole contour of the organization of William R. Summers indicates power, self-reliance, ability to think, plan and reason, and the tendency to direct, control and dominate. He has Firmness enough to carry him through any amount of difficulty, and Self-esteem enough to give him a sense of his own

BOUDINOT C. ATTERBURY.

value and capacity, and a consciousness of ability to wring success out of reluctant conditions.

He is cautious, honest, friendly, inclined to supervise, and help and work, rather than to be genial and companionable. He has a logical and critical type of mind, with considerable imagination and inventive resource; is not so much a financier as a director, and a man to push a cause and master difficulties, and overcome obstacles.

With his dark complexion, he is tough

as a whip, tenacious, enduring, and as positive in spirit as he is enduring in fibre. Here are the elements of a natural leader and a great worker.

N. S.

For many years past a worthy movement has been gaining disciples, and today the Christian world accepts it without further argument as an important adjuvant to the extension of religious and moral truth, although it has never been included in any time honored creed, catechism or "doctrinal" sermon. It has, however, the prestige of being first taught allegorically by the first Missionary, in his delineation of the good Samaritan; and by him it was practically demonstrated through all the days of his thoughtful tender-hearted ministrations. If souls are to be won with any degree of permanency, the effort to that end must be made primarily through the medium of comforts to the perishable body.

Out of the reception of this truth has grown the new system of Christian missionary work combined with medical and surgical skill addressed to the ailing flesh. Experience has abundantly taught that under the soothful touch of skilled hands the sense of gratitude leads the patient to become a willing listener. In a degree he is at the mercy of the doctor, realizing that, if he be "a tough customer," he is apt to keep a civil tongue in his head and the wise healer ventures to sow the good seed of Gospel truth in mental and moral ground that may be as unpromising as the neglected or mutilated or rum-sodden fencing within which it is enclosed.

We give portraits and sketches of a few of the leading spirits in the movement. The reading public is already familiar with the names of Duff and Livingston, whose pioneer labors have influenced many to follow in their steps.

WILLIAM R. SUMMERS.

DAUPHIN W. OSGOOD was born in Nelson, N. H., Nov. 5, 1845, graduated in medicine at the University of New York, in the spring of 1869; opened a sanitarium at Foochoo, China, Dec. 1869, where he died Aug. 17, 1880. Dr. Osgood in addition to his arduous labors as a physician and missionary teacher completed a translation of Gray's Anatomy into the Chinese language, and so accurate is the work that it has be-

come the foremost text-book of the subject in China. Dr. Dowkontt is the possessor of two volumes of the work, presented to him by Dr. Boudinot C. Atterbury, during his recent visit to his home. The records of the Foochoo sanitarium show that during his ten years residence there, Dr. Osgood gave gratuitous medical aid to 51,838 poor persons. Two years previous to his death he established an asylum for the victims of the opium habit, and of 1500 patients, who underwent treatment, a very large number were dismissed "cured."

In physique Dr. Osgood was large, symmetrical, vigorous and strong; mentally well-balanced, with a large endowment of good common sense, quick intuition, and clear practical judgment. In compliance with the request of native patients an inscription in Chinese was placed on his tomb.

WILLIAM ELMSLIE was born in Aberdeen, Scotland, June 29th, 1832. In 1864 he left his native land to become a medical missionary in Cashmere, India, Eight years later, Nov. 18, 1872 his useful life closed amid the scenes of his labors. Dr. Elmslie's name is included in the list of "illustrious shoemakers;" his love of books was so strong that at twenty years he held certificates of proficiency in the classics and sciences, as well as in shoemaking. So rapidly did he win the love and confidence of the people of India that complaints were lodged against him by native priests, and the Viceroy, to his own permanent disgrace, issued an order suspending the work of Dr. and Mrs. Elmslie. The sorrow of the good man was too great to be borne at a time when he was exhausted by continuous and severe labors, and he did not live to complete the journey of exile to another place. On his arrival in Cashmere, Dr. Elmslie entered the temple of an idol as a spectator. A priest threw a garland of flowers around his neck. He says in a letter: "Fancy me decked as if to worship this contemptible stone image." It was at once ludicrous and prophetic — the massive, rugged Scotchman in his severely plain garb, with the gay blooms on his breast. To-day those idolatrous people garland his name with sweetest praise, and his tomb with the brightest flowers.

BOUDINOT CURRIE ATTERBURY was born in New York City, June 10th, 1852, entered Yale College, class of 1873, but did not graduate. He attended medical lectures at Bellevue Hospital College, New York, and was graduated there in 1876. He then took a post graduate course in Europe, and travelled extensively, gaining a wide experience. Socially he is a great favorite with educated people. Physically he is of fine form and presence, the refinement of generations of intellectual, pure-minded ancestors seems embodied in this young man, who, unlike most of his *confreres* never had any battles with adversity. Born to wealth, he uses it liberally in the furtherance of the cause he has espoused. With every inducement to a life of elegant luxury and ease, he has voluntarily taken up an arduous work in a difficult field. In 1879, Dr. Atterbury opened a hospital in Tient-Sin, China. Within nine months he had attended 11,000 patients. In 1884 he came home, remaining seven months. He is now engaged in the building of a large hospital for the medical-missionary work in connection with the Pres. Board by whom he is commissioned.

GEO. D. DOWKONTT was born in London, April 25, 1843. His father was a Polish refugee, a soldier of the Revolution of 1830, where he obtained the Cross of the Legion of Honor. He married an estimable Englishwoman, and lived in comfort until his son George was eleven years old. Rendered homeless at that time by adverse circumstances the boy worked his way through great difficulties and with wonderful endurance and patience. In Regent street the penniless, hungry boy held a gentleman's horse a few minutes and received a shilling; half was spent for supper for the family,

and half for morning papers the next day. It was a beginning, and the little fellow kept his charge in bread for some weeks, when the mother died of a broken heart. At sixteen George entered the British Navy as an ordinary seaman. He was so large of frame as to pass for twenty years old. His aptitude soon gained him the position of dresser and dispenser to H. M. Dock Yard, Portsmouth. While in the Royal Navy young Dowkontt's pleadings led Miss Weston to take up her admirable work and, in 1871, the R. N. Temperance Society was organized by the energetic man. In 1874, Dr. Dowkontt entered the Liverpool Medical Missionary work, remaining three years, then came to Philadelphia, and graduated at Jefferson Medical College, March, 1881.

Without means or friends, knowing only one man in this city, Dr. Dowkontt came to New York immediately after graduating; in the brief space of five years he has established four dispensaries, and a training institute. A large, well-built brown-stone house, No. 118 E. 45th Street has been leased, and furnished, and ten students are there busily engaged in professional studies. Dr. Dowkontt is pre-eminently fitted to organize and push to success enterprises of a philanthropic nature. He wins at once the confidence of those with whom he comes in contact; is concise in statement, energetic in manner, and skillful as a physician. His eldest son is preparing to follow in the same path.

William R. Summers, the first graduate from the New York Medical Missionary Training School was born April 28th, 1855, in the Isle of Guernsey. From boyhood he was an explorer. He desired knowledge but hated the restraints of school, and playing truant spent his time in a printing office. While yet a boy he was a strolling acrobat and successful conjurer. He, it was, who imitated Dr. Slade at the Dublin Rotunda some years ago. The mother of Dr. Sommers became interested in the Liverpool Medical Mission influenced by Dr. Dowkontt, in 1879, and young Summers, forsaking his conjurer's tricks, joined with his mother in the mission work and obtained a position on a local paper; in the autumn he joined Dr. Dowkontt in Philadelphia. Then he began to realize the need of systematic education. Impressed with the sincerity and value of the man Dr. Hanlon, of Pennington Seminary, bade him welcome there, and bravely did he apply himself, regardless of shabby clothes and needed comforts. He entered the University Medical College of New York, graduating the spring of 1884 with high honors. In October he sailed for England, and January 7th, 1885, in company with Bishop Taylor, of the Am. M. E. church went to his post in Central Africa. Dr. Summers is of commanding presence, dignified, rather sedate, and given to few words. His letters are always well written and interesting.

That all philanthropists can not enter the field at the same door is an accepted fact; Mr. D—— a young Scotchman now resident of Chicago, is one of the purse-bearers for the Medical Missionary work. Risen from humble rank he realizes the need of systematic work among the poor and from the first dollar he ever earned until now, when he is earning a large salary, he has promptly given one-tenth of such earnings to the cause. His letters to Dr. Dowkontt are not only interesting but of practical value.

Cornelius Vanderbilt, eldest son of William H. Vanderbilt, was born at New Dorp, Staten Island in April, 1844. Early manifestations of good business abilities made him a favorite with his grandfather. Mr. Vanderbilt was one of the first active supporters of Dr. Dowkontt's enterprise, and his interest has never flagged. Not only does he give financial aid, but counsel and advice of especial value. He comprehended the need of practical training in the best methods of reaching the poor;—training which could not be obtained in regular

medical colleges, and to that end has been a very generous helper in this as in many other philanthropic movements. In person Mr. Vanderbilt is prepossessing and affable on acquaintance, though distant to strangers. He is a pleasant conversationist, a charming host, and an ardent patron of the fine arts. His house is a temple of treasures as well as a *home* in the true sense of the word. A. E.

A FACE.

Only a face on the busy street
  He saw as he passed along;
Only a face, but it was so sweet!
  It haunted him like a song;
Amid the press of hurrying feet
  It haunted him for long.

And many a day, as faint and tired,
  He travelled the way again,
He saw it still, and felt inspired
  'Mid crowds of teeming men;
And a stronger wish was in his heart
  To do good by word or pen.

But the stranger who passed him never knew
  The joy that he had given;
How the smile of his face, so kind and true,
  Had been as balm from heaven,
And gladdened and cheered a weary heart
  By storms and tempests driven.

Only a face on the busy street;
  Who can tell how many more
Were cheered and refreshed by that face so sweet,
  By the kind look that it wore,
Amid the press of hurrying feet
  And the city's dreadful roar?

ANDREW M. LANG.

KNOWLEDGE.

KNOWLEDGE is the result of mental operations, and is the same in kind whether possessed by the rude and uncivilized man, or the philosopher. Beginning with the ordinary experience of mankind, it develops into its higher forms explaining the phenomena of nature. It is then called science. Science then, is a knowledge of nature and her laws. It is man's prerogative to understand nature's laws and to anticipate her results, from the constancy and uniformity of her operations. She is constantly soliciting our attention to the multitude of objects around us, and unfolding her rich treasures of knowledge for our instruction and for the accomplishment of universal beneficence. We may begin with the impressions made upon our senses as the starting-point of all science, and arrive at the most abstruse logical deductions from which we may obtain an exact prevision of the sequences of the operations of nature, in the universality of her operations. Observation is the first step in the acquisition of knowledge. By it the mind duly investigates the objects to which it is directed. Then comes discrimination which leads us to classification. As science is a knowledge of nature and her laws, it is an advance upward from the platform upon which the ordinary mass of mankind more humbly tread, when new discoveries and inventions are evolved from the storehouse of universal knowledge, and made to be the rewards of careful experiment and unremitting effort. The present state of advancement in knowledge is the result of assiduous study of those crude facts with which every one is acquainted. The merest schoolboy has seen that fire produces heat, that bodies unsupported fall to the earth, and that the current of electricity given off in the lightning-flash produces a shock; but these are matters of ordinary experience to him. The scientist proceeds from these facts to the Atomic Theory of matter, which teaches that matter and force are inseparable, and that chemical changes occur throughout all nature with numerical precision. Science is not a meaningless

term, nor the dogma of philosophers alone, it is systematic and rational, and leads to the development and guidance of art. There is no reason why we should not all understand nature's loudly proclaimed intelligence, of the beneficence of a wise Creator.

Scientific inquiry depends wholly upon boldness of thought and fertility of invention, that vitality of intellect which evolves ideas where ordinary minds see nothing; that earnest mind which being warmed by the friction of its own thoughts, rises above the plane of thoughtless indifference. The vulgar see nothing in nature's beauties and mysteries. To such the poet aptly alludes:

> "A cowslip by the river's brim
> A yellow cowslip was to him,
> And it was nothing more,"

but it tells much more to the inquiring mind of genius. Facts whether relating to physics or the world of mind were perfect before their evolution into the sphere of human knowledge, and this evolution is a bringing out from the great reservoir of nature her hidden treasures. This is a result of boldness and intensity of thought, accompanied by careful experiment and concentrated effort.

Our attainments can never exceed our aspirations; nor can we make any great progress without the anticipation of an end in the future. All great achievements have been by persons who looked forward and upward to some high purpose, and applied their hands and minds to the necessary means with concentrated and unremitting effort. When we consider the many branches of education and departments of human effort, and the corresponding diversities of intellect, we can find no more appropriate way for the highest development and improvement than the satisfaction of our aspirations. Nature is truthful in her teachings, and one can not better fit himself for doing good than to consult his peculiar aspirations and strive for proficiency in his own sphere of life.

All science is of the mind, and may be regarded as a signal of its march. In the present advanced state of knowledge we possess stepping-stones to fuller developments than were ever known to the philosophers of Greece or the sages of remote antiquity. The obstructions of empiricism, and of heathen philosophy have given way before the conclusions of science; and these have furnished us with such a voluminous system of modern philosophy, that our age is constituted an era of surpassing brilliancy. Indeed this is a day of great mental excitement and of deep philosophical research and investigation. Many of the sciences have been well nigh reconstructed, and the teachings of nature obtained by exact demonstrations have received new interpretations yielding her most valuable treasures.

D. N. CURTIS.

IMPROVE THE MORALS.

FROM the days of Moses, the great lawgiver of the Jews, to the present time much stress has been laid upon the cultivation of the moral nature of man by religious teachers. The commands in the Decalogue appeal directly to holiness of life and the necessity of doing justly in order to secure happiness. Washington maintained that our nation, in order to be perpetuated, must have an enlightened moral sentiment instilled into the minds of the people. Swift said "All nations have agreed on the necessity of a strict education which consisted in the observance of moral duties." Christ pronounced the severest woes upon the Scribes and Pharisees, who were wise in human affairs and intellectual attainments but deficient in equity and justice, — "devouring widows' houses and making long prayers at the corners of the streets, to be seen of men."

For this lack of moral rectitude the Jews were led into captivity and Jerusalem was destroyed by the invading armies of Rome. Thus has it been in all civilized nations in past ages, and thus it will continue to be with all countries in the future, where the moral sentiment of the people is not sufficient to support the eternal principle of justice.

"There are many who believe with Patrick Henry, that 'there is no way of judging of the future but by the past.' If this mode of judging is correct the hope of the future is disheartening to all philanthropic minds. The man whose views of moral culture are founded on phrenological principles believes in the progress of the race in morality, and consequently, has faith in the Scriptural prophesy of a future time, when universal peace shall prevail in the world. Phrenology teaches that man is endowed by the Creator with a faculty called Conscientiousness, and if the training of that faculty is neglected in childhood, immorality and crime will be the result of adult age, even if the intellect be highly cultivated. With this great truth staring the educators of the world in the face, the training of conscience in the public schools of New England is not made obligatory by legislative enactment. At a meeting of the school committees of various towns in Hampdon county, Mass., held in Springfield a few months ago, the subject of moral training in schools was discussed briefly, but without creating much interest on the subject. The superintendent of the Springfield public schools said that teachers were expected to instruct their pupils in the moral virtues, but the laws of Massachusetts did not require them to teach the commands of the Decalogue. The discussion ended with a general smile when an aged clergyman—a member of the school committee from the town of Monson said: "Would you not have instructors teach their pupils the command in the Decalogue, 'Thou shalt not steal?'"

The Secretary of the Board of Education of Massachusetts, who has recently visited the hill towns in the western counties of the State, complains of the antiquated method of giving instruction, in some of the schools, by incompetent teachers. This incompetency may apply to mental, but not to moral culture. Seventy years ago it was a common practice in the public schools of New England to give moral instruction to the pupils every Saturday forenoon, having for a text book a work entitled, "The New England Primer," which contained the basis of moral conduct, which was the Decalogue. The school committees of that day were men who labored for the cause of education without large salaries, and in many instances the leaders or the chairmen of the committees were the clergymen of the parish where they resided. It is generally admitted that vice or crime among educated men of the present time is more common than it was among the earlier descendants of the Puritans, taking the population into consideration.

And now we see no way to stop the career of crime and its increase except by applying the principles of Phrenology to the education of the young, and having proper instruction given directly to the innate sentiment of Conscientiousness. The church has not done it and can not do it by merely appealing to the devotional nature of man, and neglecting his morals. It is quite common for dishonest persons to be devout; and conversion, however genuine, does not change essentially the mental nature of man, but only gives a new direction to his natural faculties. Let all public instruction be based on truth, with the rational commands of the Decalogue for its basis of morality, and Phrenology for the true exponent of the *how* to give moral instruction, and in due time reformation among well-educated persons will become apparent. This theory is not antagonistic to the Christian religion as taught in the Scriptures, for natural and revealed truth will always harmonize.

P. L. BUELL.

A NEW PHRENOLOGY.

IN an address before the American Association for the advancement of science, by the retiring president, Prof. J. P. Lesley, as reported in the *Popular Science Monthly*, for December, after exhorting the members to zealous and careful study of facts and to "dead work" in connection with them, in which he is severely, though justly, sarcastic on the charlatanry and ambition that causes so many to thrust themselves forward with a few facts or a crude philosophy, he winds up with some excellent advice for the relief of an over-tasked portion of the brain by the exercise of another portion of it; and in this advice he declares the cerebellum to be the seat of the will-power, which the over-worked president of a railway company has been exercising to such excess that he falls asleep at the directors' meeting. He prescribes that the exhausted man ride some youthful hobby—specifying practice on the violin, and the playing of billiards. This for the relief of the overworked cerebellum! The professor asserts that the physiology of the brain is sufficiently well understood to permit the physician to prescribe with some assurance, and in this he will not probably be disputed; but from what source has he learned that the overworked part of the railway president's brain is the cerebellum?

The prevailing opinion with physiologists appears to be that one important function of that organ is the co-ordination of motion, as in walking, and in voluntary movements of the arms, but not of the face or of the muscles of speech, while another function is in some way connected with the sexual instinct. Skill in playing on the violin would therefore require a high degree of one of the functions of the cerebellum. In experiments upon pigeons, after the extirpation of the cerebellum equilibration is lost, and the bird although unable to fly, walk or stand, yet retains its will-power, as seen in the effort it makes to escape a threatened blow.

The venerable professor's prescription is far better than his physiology, for it would result in the relief of one portion of the brain and the exercise of another, although the parts do not correspond with his statement. It would seem as though the advice from an Australian judge which he quotes only to depreciate, "Pronounce your decisions, but beware of stating your reasons for them," would have been useful to him with a slight modification.

It is remarkable that men of science, careful in most things, no sooner touch upon anything relating to Phrenology than they lose their ordinary circumspection, as though it were a very simple subject, one that may be safely guessed at; and so they will give it no serious attention. In this spirit a remark was made in my hearing in the course of a lecture by Prof. Cope, at Franklin Institute: "The Phrenology of fifty years ago is not true;" and another by the same gentleman as reported to me by a member of the Institute, "We have no Phrenology now, but we will have."

Phrenology appears to be the stumbling block over which professors of science bark their shins, and which they will continue to do until they consider that the years of careful observation, which have been given to it by men as well able to observe as themselves, entitle their opinions to some respect. Were they to reflect upon the different modes of investigation practiced by physiologists and phrenologists, upon the extent of the work done by phrenologists, and that physiologists have attained only to the localization of two centres for mental faculties (language and amativeness), and even these but imperfectly defined, and that both of these tend to confirm the accuracy of the phrenologists, they would be less inclined than

some of them at present are to treat with contempt the phrenological system.

There are two classes of persons who treat Phrenology as though it were merely a system of craniology, as described by a Western editor who said he could tell by the bunions on a boy's head whether he was going to be hung or become a missionary! One of these classes has the credulity to believe it, and will declare a man to be honest, if he has a fullness at a definite situation, in spite of his antecedents. The other class appears to comprehend the subject no better, and they assume that craniology is everything, but, having a little more discernment of character, they find instances in which there is a full amount of brain with little character to correspond, and so, without giving any attention to the temperament or the quality of the brain, they discard and decry the system of Phrenology.

J. L. CAPEN, Philadelphia.

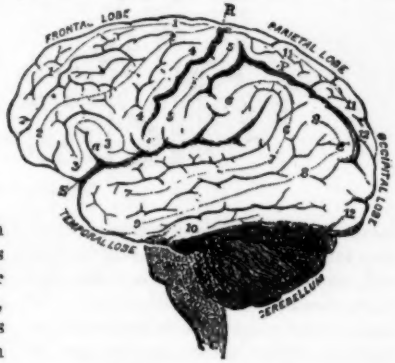
FAMILIAR TALKS TO OUR YOUNG PEOPLE. NO. 2.

ALIMENTIVENESS AND INDIVIDUALITY.

THE first instincts or faculties of the human mind that come into exercise, are those that have to do with the growth of the body. The little infant for some months after its birth does little besides feeding and sleeping. Nature simply concerns herself about its getting

ALIMENTIVENESS LARGE.

more bone, muscle, and nerve, and with its gradual increase in size new powers awaken into life, until baby at five or six months begins to notice things, "crows" and is pleased by the caresses of friends. The instinct to eat has an organ in the brain called Alimentiveness, which, if large or strong, makes one very fond of eating, when he is a grown man as well as when he is a boy. It lies in the lower region of the brain near the front end of the temporal lobes, those parts of the brain on both sides that are just over and in front of the ear—you know the parts of the head that are called the "temples." In scientific language they are called the *temporal* regions from the *temporal* bones of the skull, that are situated there; and so the temporal lobes of the brain are named as they lie against the temporal bones. The openings of the ears pass through the temporal bone—I give you a picture of the brain divided into lobes, which shows where the temporal lobe is. Several very important organs of the brain lie in the



LOBES OF THE BRAIN.

temporal lobe: Destructiveness—that was the subject of our talk in the January number,—Acquisitiveness, Secretiveness and Vitativeness, all, like Alimentiveness, have to do with keeping

and sustaining the body. In the Phrenological works they are called physico-preservative or selfish organs, as they appear to be specially designed to take care of Number 1. The organ we are now talking about lies in the region of the number 9 of the drawing.

When Alimentiveness is large, the head is wide above the cheek bones, as shown in the figure, and its influence is very marked. While everybody may be said to like to eat when hungry, yet people whose Alimentiveness is small or moderate will not show any anxiety about meal-time. If they are doing anything that interests them, they may let the table wait some time, or must be called more than once before they will go to it. Persons whose employments are sedentary, teachers, writers, artists, are not as a rule remarkable for good appetites, or fondness for eating, and when hard at work often forget all about dinner; but those who have large Alimentiveness appear to be nearly always ready to eat. They take a great deal of pleasure in their meals, and are fond of variety in their food, and will spend a great deal of their time in talking about victuals and drink.

This organ gives one taste in the selection of food; I could scarcely suppose a good cook without large Alimentiveness. Look around you, and you may be able to pick out the big girl who will make a good cook, and like to cook, and the boy who is always on hand when the dinner-bell rings, and who likes to be in the kitchen when mother is getting up a rice pudding or drawing a fowl for dinner. Your jolly good liver, like the stout party in the picture, is never happier than when the table groans under the weight of toothsome meats and drinks. His mouth waters when allusion is made to broiled larks, roasted oysters, apple pie, cream pudding.

THE JOLLY GLUTTON.

The cultivation of this organ, by letting its inclinations have their way, tends to make people coarse in their tastes, and more or less rude in manner to say nothing of the bad habits that are thus fostered. See the animal satisfaction of our fat champion of the knife and fork, as he welcomes the coming of the boar's head.

Pork, I would not counsel any of my young readers to eat often, as I think that it somehow is not a proper article of

INDIVIDUALITY LARGE.

diet, and does not help to form good principles in the matter of eating and living generally. We ought to get hold of true ideas about eating early in life, because the appetite has a great deal to do with our success in life. Nature gave man the organ we have been talking about, so that its prompting should serve to keep him healthy, and able to do the work that belongs to his part in life — but to make it an instrument for indulging in all kinds of excesses, stuffing the stomach with good or bad food and drinking all sorts of liquids, is to break nature's laws and make Alimentiveness a means of self-destruction. Eating unfit food, or too much of good food, is the first step toward sickness; big feeders as a rule are unhealthy, and break down suddenly with indigestion, or heart-disease or apoplexy. The use of alcoholic drinks is due to the improper exercise of Alimentiveness; and let me say here to the young reader that those who have the organ large, are likely to fall into habits of drinking harmful things if

LITTLE TOT LOOKING IN THE WINDOWS.

they are not watchful. You laugh at and despise a miserable drunkard when you meet one reeling along the street, muttering to himself, and perhaps throwing his arms about in a fantastic way, but you should understand that the poor fellow was once as orderly and clean and proud-spirited as yourself, and had no thought of ever becoming the degraded thing he is. Good fellowship, free and easy companions, "treats" to cider, beer, cigars, were the steps that led him downward until he found himself in the net of a bad habit, fond of drink, and too weak to break off. It is wonderful how great the power of Alimentiveness when perverted, corrupted, is. It seems to have an influence upon every part of the body weakens the very bones and muscles, and takes the grit, will, and spirit out of a man. Some of the grandest intellects the world has known, have been sacrificed on the altar of the appetite; thousands of men have broken down in mid-career, when the world was looking to them for great things, through improper or vicious practices in eating as well as drinking.

INDIVIDUALITY.

This is a faculty that belongs to the intellect, or what we call the knowing and thinking groups of faculties, and as Alimentiveness is the first of the self-preservative instincts to be active, so individuality is the first of the knowing or observing faculties to come into use with the growth of the infant. Its organ lies in the lower part of the front lobe of the brain, (see illustration of brain) and right in the central region of the head between the eyes, and just above the junction of the nose with the bones of the forehead. See the sketch of a young man's face in profile that shows it very large. When large the forehead projects considerably at that place, and when small the face shows little or no hollowing there, but the line of the nose may be carried quite straight up the middle of the forehead.

It is the action of this organ that inclines people to want to know about things. The little child is always looking, looking,—it points at this and that with its little hands, and cries, "See, see, see." One that has it particularly active is restless and ever on tip-toe, looking at everything in its neighborhood, going from one thing or person to another, and for the moment gazing closely at

PRACTICAL OBSERVER.

them. You often meet a little one who while walking with mother sees wonderful things at every minute as they go along the street and it is "See mamma, what's that? Oh, come, mamma, tell me what that big thing is over there." In the engraving we have a little girl out walking with her older sister, her Individuality is all alive and interested with the sights by the way—the toys and dolls in the shop window greatly attract her, and she pulls with all her might to have her sister go up close to the window so that she can see the pretty things inside. Other organs have something to do with her eagerness, but Individuality is one of the strongest at work. When you find a boy or girl with this faculty weak or small they don't show much interest in things about them; ask few questions; don't care much to go to the museum or collections of different objects, and show very little knowledge of things. They

pass for dull, even stupid, although they may have good qualities in other respects. Bright, quick-witted children are always well supplied with this faculty, and the dull ones lacking in it ought to be trained so that it will be made more active. Men with it large are distinguished for their fondness for seeing; everything that is going on they like to know about, and are stirring, active, fresh and re-active if they have a temperament like the dark-complexioned man in the illustration.

EDITOR.

THE STUPIDITY OF SENSIBLE PEOPLE.

SIR Isaac Newton constructed a house for his cats. For the convenience of the cat he cut a large hole for entrance, for the equal convenience of the kitten he cut a smaller one, and it was not until his attention was called to it that he realized the fact, which one would suppose might be self-evident to the feeblest understanding, that the large hole would have served for both. The author of the "Principia," one of the grandest works of the human intellect, failed to perceive that a kitten could go through a hole made for a cat.

Richard Brinsley Sheridan hired a suburban villa, and two days later received a visit from a friend, who was told to climb the fence in order to enter the house. "But why not open the gate?" the friend inquired. "Because I can't untie the string." "Why don't you cut it then?" Sheridan looked at him in amazement, drew his knife, cut the rope, walked through the gate, and turning around kicked it off the hinges. "If you love me, please kick me in the same fashion," he remarked to his friend. The most brilliant wit of his time, the dramatist who could unravel the most intricate complications in stage situations, had climbed a fence for two days for lack of the stroke of a penknife.

A few years ago one of our famous men was found dead under circumstances which gave rise to suspicion of suicide. One of his acquaintances remarked, "He was certainly crazy. One evening I called upon him and found him trying to write a letter. I could hardly see my way across the room. He complained that his eyesight must be failing, as it was hard for him to follow the lines upon the paper. In surprise I turned up the gas. His look of astonishment as he glanced at the light, at me, at the letter, at the light again, was something impossible to describe. Of course he was crazy. If he hadn't been he would have turned up the gas himself."

So easily do we reach our conclusions; so easily do we take things for granted. Yet Sir Isaac Newton was never supposed to be "out of his mind," and Sheridan was never suspected of being a lunatic. The gas jet simply served to throw more light on the stupidity of a sensible man, instead of proving by its feeble glimmer the corresponding feebleness of his intellect.

Nothing is more constantly and completely surprising than these apparent lapses of intelligence in persons whose intellect is acknowledged to be superior to the average. From a fool we expect foolishness, and seldom have we reason to complain of disappointment. From the wise we expect wisdom, though we sometimes fail to find it. It is said that it is only the fool who learns no wisdom from experience, but the foolishness of sensible people is generally of a kind which experience can in no way modify. It is occasional, variable, unexpected, of a peculiar quality, admits no argument from precedent, gives no basis for calculation. Probably by contrast and incongruity its effect is heightened and it seems more senseless than ordinary dulness, because it is inevitably compared with the usual mental brilliancy.

We learn from the entertaining "Letters of Gustave Flaubert" that he had pre-

pared a dictionary of "the stupid sayings of great men," and the volume is a unique and amusing one. It was the illustrious Napoleon III. who made the profound observation, "The wealth of a country depends upon its general prosperity." The famous Havin wrote, as if giving utterance to a most valuable philosophical statement, "As soon as a Frenchman passes the frontier, he finds himself on foreign soil."

Emerson says, "Men who have commanded great armies and taken great armies and taken great cities, who have made laws for an empire, or proclaimed the greatest discoveries in science, have sometimes shown the utmost idiocy in connection with the commonest affairs of life."

Some of the greatest financiers are the first to involve themselves in financial embarrassments. Their familiarity with the fluctuations of the money market, and a long career of success, has made them careless of risks and consequences. The world looks on open-eyed at the colossal schemes carried on by the brains and capital of these men, and stares open-mouthed at the inch-long letters in the daily papers announcing their commercial crash. It is, in fact, only the great kings of finance who have sufficient knowledge of the situation to take such chances, or who have sufficient ability to handle the weapons with which they affect their self-destruction. Where we have confidently looked for the greatest financial wisdom we find the greatest folly.

The legal counsel who influences his clients to wise fore-thought and precaution, is quite as likely as the most stupid one among them to neglect proper provision for the future and leave his own affairs in the most hopeless involvement. We wonder far more at the sage counsellor than at his stupid client. In the case of the latter it was to be looked for —no more than might have been expected. In that of the former, it is a surprise and disappointment.

We are fully prepared to find the silly girl leaving off the warm wrapper to which she has been accustomed, in order to appear at a party in a low-necked dress. We are simply contemptuous—not surprised--when she wets her feet and ruins her boots because rubbers hide the pretty shoes and make the feet look larger. But when a woman famous for her common sense in most of the affairs of life, does precisely the same thing, and perhaps with even less temptation, it seems a silliness surpassing all comprehension.

The boy who after a game of ball drinks great draughts of ice water to cool his heated blood or goes into the river for the same purpose, is checked whenever possible and severely reprimanded at all times. When the wise physician shows some equally stupendous stupidity concerning the commonest hygienic laws, remonstrance is paralyzed upon our lips by an overwhelming amazement. It is the same sort of amazement which we feel when we see a person whose name is a synonym for prudence in most matters, deliberately eat something which he knows always injures him, or trust to a tradesman who has habitually deceived him, or lend money to a man who never pays him, or marry a woman who can never please him.

There is no greater proof of the stupidity of sensible people than the marriages that some of them make. If love be, as is sometimes asserted, a matter wholly of the heart, matrimony an affair entirely independent of the head, then some of the matches made by some gifted individuals may in a measure be accounted for. A man with strong domestic taste and aversion to society marries a fashionable flirt, and the quiet fireside for which he most ardently longed is the one thing he can never hope to have. The sensitive, conscientious woman marries a man who runs in debt for the very ring he places on her finger, and her life with him means one long mortification and misery.

As frequent as foolishness in marriage is foolishness in the management of children, such stupidity as would brand the parents as idiots, were it not for their good sense in all other matters. The skilful, thrifty housekeeper, carefully trained herself, and appreciative of all household excellences, allows her daughter to dawdle through the days ignorant of everything that can make her useful, or can make a home comfortable. The hard-headed, honest, industrious farmer lets his son slip away from the farm to the city, and sends after him supplies of money which he is fully aware support him in idleness and profligacy. The imbecility of second childhood seems to be reached and surpassed in the dealings of some of these sensible people with their own children.

Who will dare to define common sense, that least common, as we sometimes think, of all human endowments, and yet the quality most essential to every hour of existence? Our almost unconscious definition of a sensible person is, "One who thinks and acts as I do." But this becomes a ludicrous one when we reflect that according to such a definition there would be as many standards of sense as there are individuals in the community. "Orthodoxy is my doxy, and heterodoxy is everything that differs from it" is a statement quite as often made concerning our social as our religious notions. If for fear of offending we do not say it aloud, we nevertheless live under its conviction, and assume that those who differ from us are in the wrong. Of course if we did not think so we should agree with them.

It is, however, fair to concede that the sensible person is the one who in social life is loved by his family and friends, and respected by his neighbors; in commercial life, one who is honest and successful, securing the largest returns from the least investment of time, money and labor; in professional life, one punctilious in all engagements, true to all trusts and obligations, clear sighted and reliable. In all cases the sensible person is the one who most perfectly adapts himself to his circumstances and surroundings, who submits uncomplainingly to the inevitable, who strives at all times to do unto others as he would have others to do unto him, and, in short in the words of one of our latter-day scientists, "harmonizes with his environments."

In every community there is always a class which illustrates these virtues in an uncommon degree, who attract admiring attention for their remarkable judgment, tact and success, the outgrowth of the most fully developed common sense. It is to these persons that we naturally look for all that is more satisfactory. We feel defrauded when it fails us, and argue that if such a lack of sense can be shown by persons possessing so much, there is little to hope for from the less gifted mass of mortals.

It is possible that we ourselves are illogical and consequently unreasonable. It does not necessarily follow that because a man possesses nine talents he must have the tenth also. We must take what we find, glad to get so much, not complaining because there is no more. Human nature is fallible. When men and women are found so symmetrically and fully developed that they display no single spot of weakness or folly, truly we shall have reason to expect the foretold millenium. "A fellow-feeling makes us wondrous kind," and a consciousness of our own short-comings should be the most powerful plea for consideration to others.

C. B. Le Row.

SUNSET.

From hill, and dale and woodland,
The wondrous, golden light,
Softly now is fading.
As the dainty sunbeams bright
Flit down the paths
Of pink and gold,
The guard of his glorious Majesty,
And through the lovely,
Glittering sheen,
The opal gates flash radiantly. K. C.

W. H. VANDERBILT, THE RICHEST MAN IN AMERICA.

THE death of a man who controls great enterprises must always be deeply interesting to the public—and when such a man as William H. Vanderbilt dies, who has long borne the reputation of being the richest of all the rich men of America, and whose wealth was represented for the most part in extensive railway systems employing many thousands of men it must be expected that the event will have an importance that we may properly characterize as national.

One may say with glib facility, "He was worth nearly two hundred millions" but much reflection is necessary to perceive what such a statement involves; not merely the various forms of pecuniary investment, the numerous commercial or industrial enterprises to which so vast a capital may be applied, but the great moral obligations that are inseparable from its possession. A many-times millionaire is of necessity a marked man, a subject for study; his daily life is a matter of public comment, and unless his cuticle is thick and his temperament insenstive he is made to realize that riches, like the crown of sovereignty, do not contribute to ease and comfort.

WILLIAM H. VANDERBILT.

Some eight years ago we published a sketch of Mr. Vanderbilt with the por-

trait we give of him now. A little thinning of the hair and some added grayness, and the reader sees the man as he appeared not long before his death on the 7th of December last. In organization and character he resembled his father strikingly in many respects. At the same time there were elements of form and expression which must have been derived from his mother, and the resemblance to his mother was an improvement to constitution and character. His father inherited largely from his mother's side, consequently the intuitive spirit of the feminine character was conspicuous in his conduct, impressing him with readiness of decision and with certainty of being correct in his judgment. Thus our subject took on both masculine and feminine elements by inheriting from the father; courage, force, will-power, unswerving determination, and also much of the intuitive, sensitive, and susceptible. By inheriting from his own mother, who, we judge, inherited largely from her father, he received similar elements of strength, and also a practical intuitive sense of truth which belonged to his mother, thus braiding and blending the four elements derived from his masculine mother and his feminine father. By this we do not mean that the mother was grossly masculine, or that the father was weakly feminine; but we do mean that he who is fortunate enough to inherit his mother's intuitions and sympathetical sensibilities is largely more a man than he who acquires solely from the father the dry logic and the laborious energy that belong to the masculine type. If the reader will take into account, then, this combination of quality and tendency, talent and disposition, he will be able to understand the following inferences: First, that Mr. Vanderbilt was very clear-headed; that he knew for himself, and sought to find out facts in such a way as to be able to act without advice or external influence. He sought what other people know as material out of which to form his own judgment; but like his father, he did not accept dictation. He had a memory that enabled him to hold his knowledge and carry it, as it were, in solution, so that it was invaluable. Like one who winds up a ball of yarn, he carried his facts and knowledge with him so that it might be unwound and brought into use. He was known for criticism as well as for quick observation. He read strangers promptly and knew how to select men for positions in his gift. His mind was more ready in forming judgments than is common, and whoever offered him facts on which to base a judgment was expected to talk to the point and hurry through their recital, or he would show impatience. He had the power of combination and orderly action. He could appreciate machinery and the combinations of affairs so as to make everything flow smoothly and harmoniously. He was not led away by imagination, but he rather disliked people who tell great stories or spin long yarns; he wanted the facts, and he preferred to make the inferences, and draw the conclusions himself. He was more cautious than his father; and was more disposed to look after details. He was energetic, courageous, very positive, and very headstrong, but more cautious in the adopting of plans and purposes than many; yet persistent, and remarkably executive in carrying out his will.

If he had been carefully educated he would have succeeded well in literature. He had good natural language, power to express clearly and vigorously whatever thought he wished to put forth. He had respect for age and talent, and was tender toward the aged and inclined to pet the young.

He was ambitious to be approved; cared more for public sentiment than his father did, and was more influenced by the good and ill opinions of the people. He was firm—quite as much so as the father, and those who opposed him sometimes might have considered him abso-

lutely obstinate. He had strong affections; his friendships were steady and constant; he was fond of home and society; and under favorable conditions would show a great deal of personal magnetism in the direction of friendliness and cordial social sympathy.

He was no copyist, but liked to do things according to his own pattern, and would feel annoyed if it seemed necessary for him to imitate others. A natural economist, he was careful to use everything in a prudent way, and guard against loss and damage. He wanted a sound basis for all he undertook, and on that sound basis he pushed steadily, persistently, and constantly towards the desired end. He was capable of conciliating those who opposed him, but he did it more from friendliness and good nature than from any feeling of weakness in his cause. He wished to see the end from the beginning before attempting an enterprise; and once settled upon its prosecution, he pressed onward with just as much strength and speed as the case would safely bear.

William H. Vanderbilt, eldest son of the late Cornelius Vanderbilt, was born at New Brunswick, New Jersey, May 8, 1821. His early life was characterized by much of the energy and industry which distinguished his father. He was sent to the Grammar School of Columbia College, where he acquired the requisite knowledge for a business life.

To his youthful mind, however, his father's example was a perpetual incentive to strike out for himself, and he eagerly looked forward to an early beginning of these efforts. At the age of eighteen, he entered the house of Drew, Robinson & Co., of Wall Street, where, as a clerk, he soon won the confidence of the firm, then known as one of the strongest operators in stocks in New York.

At the end of two years he left the office where he had the opportunity to become a partner in the firm, on account of impaired health, and assumed the responsibilities and difficulties of cultivating an unimproved farm. He had no previous education or experience in agricultural methods, but set boldly to work, and "from early morn to dewy eve" labored in his fields, never permitting others to do more than himself. The first seventy-five acres subdued and cultivated, he extended his labors until, in a few years, he had three hundred and fifty acres in fine and profitable condition on Staten Island. The wastes and barrens were transformed into a garden, and yielded a good income.

He was subsequently appointed to the Receivership of the Staten Island Railroad Company, which had become loaded with debts and embarassments, and in this position he evinced the talents which have made him one of the first railroad men on the Continent. In two years he had paid off the claims against the Staten Island Company, connected it with New York by an independent ferry, and placed it upon a substantial financial basis. The stockholders then pressed upon him the Presidency of the company, which he resigned when called to Europe to attend upon his dying brother George.

On his return, he entered again upon a busy career. In 1864 he was elected Vice-President of the New York and Harlem Railroad Company, and the following year, of the Hudson River Railroad Company. From this time forward his life has been part of the railway history of the country. At once the confidant and son of the old Commodore, he became the able assistant through whom the comprehensive plans of the master-mind were carried into quick and successful execution.

1869 the Central and Hudson River Companies were consolidated through the instrumentality of Cornelius Vanderbilt, creating a new corporation, and Mr. W. H. Vanderbilt was appointed Vice-President and Executive officer.

Cornelius Vanderbilt died Jan. 4, 1877. He had been sick for a year,

and his death had been so long expected that it caused no shock in the financial world. Long before he died it had been known that the railroad lines under his control would be kept intact after his death, and that Wm. H. Vanderbilt would be at their head. The roads with their perfect organization, passed from the hands of father to son without the slightest disturbance. Ninety-five of the hundred millions of the Commodore's property was given absolutely to his son. The contest of other heirs for a more equitable division of the estate is still fresh in the memory of all. A compromise was finally effected, and William H. remained in possession of his vast legacy.

Little remains to be said of Mr. Vanderbilt's history. The newspapers have discussed it at great length. He attended very closely to his great interests, extended his railway lines by lease and purchase, and became a large owner of telegraph stock and real estate. His colossal fortune grew of its own impetus, like a great snowball rolling down hill. His income enormously exceeded his expenditures, and increased his capital year by year until it has been estimated at from $175,000,000 to 200,000,000. And in transmitting his wealth, care has been taken not to impair the integrity of the railway systems in which the bulk of it consisted. This, an economist would probably consider wise, and healthful to community interests in general, but the public looked for something more than merely an apologetic indication of benevolence from this man of enormous pecuniary resources, the owner of over sixty million dollars in United States bonds. His benefactions to public and private institutions, and individuals were many, but when we compare them with the benevolent work of men like Peter Cooper or George Peabody, and consider the great difference between the resources of Mr. Vanderbilt and their's it seems to us that the latter might have done much more. It has been estimated that his bequests of a charitable sort were less than one per-cent. of his fortune. The public had some right, we think, to expect from this marvelously rich man some grand expression of public spirit—something much beyond a few donations to institutions already well established. But he had other views in the use of his money.

The cause of his death was apoplexy. He was accustomed to take breakfast at nine o'clock, and on the day of his death he ate heartily at that meal, and also at luncheon, to which he sat down at 12.30, probably less than three hours after leaving the breakfast table he showed a] hearty relish for the food. Shortly after leaving the table he had an interview with Mr. Robert Garrett, President of the Baltimore and Ohio Railroad, in the course of which very important matters of interest to each were discussed, and matters involving some conflict of interests also. It is reasonable to think that Mr. Vanderbilt was somewhat warm in his expression of opinion, so that the blood already actuated by the impulse of a heart excited by a hearty meal, was drawn with unusual force to the brain and blood vessels that had grown weak were ruptured. He appreciated good living but was regarded an abstemious man for one in his position. He drank little or no alcoholic liquor of any kind, and did not use tobacco having given that up over thirty years ago. His force of will is well illustrated by the incident. It was in 1853 while the Commodore and William H. were on board the steam yacht North Star on their way to St. Petersburgh—William was an almost constant smoker and was puffing his cigar one day when his father said "Bill I wish you'd give up that smoking habit of yours. I'll give you $10,000 if you will."

"You needn't pay me anything" was the son's answer, and he threw the cigar overboard, and never smoked afterward. Perhaps that really creditable act, gained him ten years or more of life.

NOTES FROM A TEACHER'S DIARY.—NO. 3.

[Continued from the November 1885 number.]

Sept. 21st.—To-day a bottle fell from a girl's desk shivering into many pieces. The child was very much grieved about it, for it was full of porwiggles, "polly-wogs" she called them.

"Why Fanny," I said, "what is it?" "Oh dear, dear, I've lost them all, and my pet one will die." Some of the girls laughed, others looked very red-faced, and some showed great sympathy.

"How many more have bottles of young frogs?" I asked.

A good many hands went up, some very reluctantly. I ordered them to set their bottles on my desk. There they stood in line, long-nosed and broad-nosed, white and blue, green and yellow bottles of tadpoles. It was a little too much for my mirth, I laughed until I cried. Just at this point, and when Fanny had succeeded in picking up her scattered property, the door opened and the Superintendent of schools came in. I heard a low O-O-O from the back seats where the bottles came from as he seated himself by my side, and inquired if I had "just opened an apothecary's shop."

The bottles were filled with water to save the dear tadpoles lives, but none of them were corked.

"Yes," I replied, "what will you take toad or frog?"

When he learned about his niece's misfortune, for Fanny stood in that relation, he went into such a merry laugh that it caught all around. I did not need to reprove my pupils at all, I only suggested that I should not allow any person to rival my apothecary shop. Any one therefore who wished to add to the collection of bottles was at liberty to do so for the amusement of visitors. The bottles disappeared after school into numerous pockets. I have had the last of tadpoles for the present.

Sept. 28th.—I walked into the school-yard this afternoon at recess to see the children play, and get a breath of air; it is sultry indoors in spite of all the open doors and windows. They were singing in a ring:

"Little Sally Waters sitting in the sun."

When they got to

"Rise Sally rise, wipe your eyes,
Fly to the east, fly to the west,
Fly to the very one that you love best."

Who should jump up but little Katie Beck, and rush through the circle into my arms and give me a kiss. Of course "teacher *was* it." So I impersonated "Little Sally Waters," to the great delight of my charge. I felt exceedingly tired when I went out but a little change quite rested me. Some nights ago there was a very beautiful path of fire upon the mountains a few miles away—the burning continues, it has not kept an even course nor burned all the live trees; a rain checked it one night, almost suffocating us with smoke. But now that it has gone higher up it looks as if there were a palace of light with towers and steps. It is very beautiful, but we all have our fears as the wind drives the sparks toward the city. Some poor people live at the foot of the mountain. I hear that several families have deserted their homes and moved into town.

Oct. 8th.—This is my birthday, what a variety of gifts have been laid upon my desk! Flowers, fruit, pictures, and many other things of childish value. It is sweet to be remembered by loving children, some of whom had only kisses to offer, and they were quite as acceptable. There is a funny boy in school who seems so full of mischief that he can not keep still. He can mimic nearly everything. It is quite amusing since he came from his country grandpa's to hear cocks crow, geese gabble, ducks quack, chickens peep, horses neigh, cows low, and turkeys gobble in the school yard. He has a regular training school in the boys' yard. It is the drou-

est to hear him imitate the bull-frog, and all try to follow, and such shouts at their failures. He troubled me last term by imitating the children's voices, especially when one was in trouble. He is quite above that now, and takes to the animal creation, which is no harm. I have been teaching him to copy pictures to prove his art, if of value in that way. Constructiveness is well developed as well as Form and Individuality. I shall recommend that his parents secure for him a skilled teacher in drawing. His talent is worth possessing, and it will secure him from the outside influences that so injure a bright boy with nothing to do.

Oct. 19th.—I have several new scholars who seem very poor; they have few books and are not well supplied with home comforts. The other children contributed to help in buying books for them, and several mothers offered outgrown clothes. Their homes are all in ashes now but no lives were lost. The railroad company has employed the men as the sparks from the engine started the fire that burns on still. One little lad has a tumor over his eye. I asked him about it; he tells me it would cost fifty dollars to remove it, and his father is too poor to give that. I must do something for him.

Oct. 20th.—I called on Dr. T—— last night and asked him what he would remove the tumor on Willie's eye for. When he learned all the particulars he offered to do so for nothing. So he will save a precious life to the world, for his lack of sight has made the child very feeble. He is a lovely little fellow. God bless Dr. T——.

One of my pupils has been caught copying her lesson instead of committing it to memory, I had a long talk with her about cultivating her Conscientiousness. She lacks in that from faulty home training, and she is sly in mischief, needing careful watching, as she leads others into sin. She does not seem to take a full sense of this as yet; with her *it* will be a thing of time. I have been reading to my pupils in the general exercise hour from Cowdery's "Moral Lessons" and asking questions upon the stories read. At first a large proportion of my pupils did not catch the exact suggestion the questions implied, but they have awakened thought and given a new impulse to my teaching. The boys never tire of hearing of Stuart Holland, who stood at his post on the ill-fated steamer Arctic, or of the crippled Hans, the Tyrolese boy, who could not go into battle, but who lighted the signal pile to warn of the approach of the enemy. I received a note from a lady this morning, informing me that one of my pupils, whose name is unknown to her, was caught stealing her choicest pears. I had no clue to the offender, but asked in my morning prayer for grace in behalf of the lad that took my friend's pears; and that he should not become a thief. As I glanced quickly over the the sea of heads before me I saw one crimsoned face and downcast eye. When he became aware that I was looking at him he raised his head. "Please, I'll never steal again, never," he said with choking voice. "My dear," I replied, "ask God to forgive you, and then Mrs. Grey, and keep your good resolution."

Oct. 28th.—Freddy, the imitator, has brought me a knighted soldier on horseback; it is well done for such a lad. He thrives with his lessons with the artist, and is one of my best boys of late. We are drawing maps. What a difference there is with the scholars about their ability to do this well. Some take hold of it as if born artists; others catch from the black-board exercise a very fair understanding of the way of doing, and how it should look. There are a few whose eyes are too near each other to give the maps their proper width; their work always looks pinched. I have had quite a serious time teaching some of them how to measure with a slip of paper. The paper invariably gets moved a little, and it is difficult to show them

that this spoils the proportion. Mary Finch can go to the board and draw each of the New England States from memory and put down the principal rivers, cities, railroads, lakes, mountains, etc. This is a blessed gift.

One little miss cuts out the dolls' dresses for all her young friends. I am told she is "a native born dressmaker." She looks at dolly, and no matter what the size, everything fits. I had to tell them then about the dolls' hats I was fond of making when at their age. Some of my older sisters were milliners and gave me beautiful silks and satins, so that my dolls' heads were always fashionably dressed. This was very delightful to the group of happy hearts clustered about me, for it seemed to them that I must have more sympathy with them in their playthings since I loved to make doll-hats when a child. One girl stands aloof; she never pets anything. She does not have a single doll, or flower, nor does she love children younger than herself at all. She is not a lovely child to me, or a favorite with any of her schoolmates. Boys she detests utterly and wonders what they were made for. But she loves and obeys her mother, and works like a woman of thirty, with no variety in her young life; she neither asks for, nor seems to desire any. She is an average scholar, and makes no fuss over anything. I showed her a lovely doll one day, with the sweetest face a large toy shop possessed, and fashionably attired by my own hands, French kid boots and dainty mits the speciality. She looked at it with a sniff, and asked if I had been so foolish a lady as to dress a doll. "Yes, for you," I replied. "Wouldn't mother laugh to see me with a doll; why, I feel almost insulted. Give it to some baby." And that opened the way for me to tell her of the wanting faculties.

"Well, you needn't trouble yourself," she said, "I do, and shall always, hate anything that's little, and needs petting." She is only eleven, and looks even younger. Miss Kittie B—— went almost frantic over Miss Dolly so I let her hide it in her desk until school was over.

L. R. DE WOLF.

THE VANDALS, THE GOTHS AND THE HUNS.

THE *Vanduli* or Vandals originated so far back in legendary ages that the mists of antiquity still conceal their origin, though they are thought to be of Germanic extraction with a probable relationship to the Goths. An early writer says they first lived near the Sea of Azov, whence they moved to the Baltic borders. Later accounts find them in the Roman province of Dacia. The Goths in one of their fierce incursions nearly swept them from the earth. The women and their young children who were left remained quiet for a half century. Then in connection with other wild German tribes, they punished Gaul for three years, trying their strength in learning war again. Spain was next forced to feel their fierceness, and they settled in the province known in later days as Andalusia.

Thus the years passed on until 429 A.D. when Bonifacius, the governor of Africa, rebelled against the Roman emperor, and in his madness engaged these Vandals to come and assist him. They answered his call in vast numbers, and their immense hordes devastated the whole African coast. Perceiving his great mistake he hastily raised an insufficient force and hurled himself upon the javelins of the invaders only to meet defeat.

Collecting a much larger army, he made a second effort to rid Africa of this invited foe in vain; his dominions were now the possession of a people who had come to tarry and in 435 Carthage fell into the hands of the Vandal king, Genseric. Peace was established with them only by acknowledging their right and authority over Northern Africa, and sev-

eral important islands of the Mediterranean.

In 455 this dreaded people made a descent upon Italy, and for fourteen days plundered Rome. Unlike the Huns, Alaric, their leader, tried not to restrain their destroying fury, and works of art and glorious architecture were swept away in such a wanton manner, that it has given rise to a term for expressing the extreme of barbaric destructiveness in the word "Vandalism." For many years they carried on piracies and warfare, sweeping the Mediterranean Sea until their name was a terror and a threat to the surrounding nations, but Genseric died in 477, and their Nemesis was spinning upon his wheel the last threads of their fate.

The enervating African climate softened their natures and made them less formidable. Though they had destroyed two armies and two fleets, and a half dozen kings had borne the kingly title since Genseric. There came to their shores, at length in 534 A.D. a Byzantine general, Belisarius, who brought their last ruler to surrender, and he was borne in triumph to Constantinople, but did not long survive. The larger part of the Vandals were forced or persuaded into the Roman army and met death in the Persian wars. Africa absorbed the remainder in her nomadic population; and the Vandals, as a nation, were swept from the archives of our history.

The Goths who were first cousins to the Vandals, if not brothers, have been traced from the Gothones known to Pythias, 300 B.C., and later mentioned by Tacitus. In earliest historic days they fished and fought for life upon the Baltic coasts. Next we hear of them as dwelling upon the lands about the Black Sea as early as the third century. What impelled them to migrate from their frozen North to those regions is unknown. Perhaps they had only returned to an earlier home. Certain it is, they were sufficiently strong and daring to make formidable attacks upon Roman provinces, in the early part of the Christian era. They were soon so dreaded that lands about them secured immunity from their attacks by payment of large sums of money.

In the year 251 A.D. they entered the Roman province of Moesia with an army that was said to contain 70,000 men, but as the women often followed the army, perhaps all are included in this number. The Romans under Decius advanced upon them, but were defeated, leaving the Emperor and his son dead upon the field of battle. It is said that 100,000 persons were slain. As we have only Roman histories of these contests with these early Germanic races, we can not know precisely what provocation may have been given at the time to incite to this invasion.

The next emperor, Gallus, bought immunity from their visits by a large sum of money and the promise of annual tribute. Long years previous to this time, the Romans had built a wall with ditches and a long line of fortresses to defend the frontier of the lands from which they had oppressed the German nations in the North through many years of warfare. This wall was built of stone and wood, and extended from the Danube to the Main a distance of nearly two hundred miles and then northward for a long distance. The land thus taken from the early German nations was called the Roman tithe land, as it was usually let to the Gauls and others upon payment of a tax or tithe. Undoubtedly this disputed territory and a purpose of restoration were the cause of the devastation that, afterward, the Romans suffered from the Northern nations.

In the year 7 A.D. the Roman general Varus was sent by the Emperor Augustus to command the army against the German people, with instructions to bring that country under the regulations of a Roman province. The Roman army went straggling along with a train of women, children and munitions. In the depths of a great German forest, with

its immense oaks of which Pliny said: "Created with the earth itself, untouched by centuries, the monstrous trunks surpass, by their powerful vitality, all other wonders of nature," they were attacked by Arminius, the chief leader of the German tribe Cherusci, and in the midst of a raging tempest cut to pieces. Varus killed himself. When the news reached the old Emperor, Augustus, he was quite distracted with grief and striking his head against the wall, called again and again "Varus, Varus, give me back my legions!" This signal victory swept out the incoming wave of Roman conquest and made the Rhine once more the boundary of the empire.

It seems very likely that the Vandals and Goths, who belonged to the Germanic races, were in subsequent years only punishing the Romans for their indignities and their continued menace against Germanic liberty; yet nations as well as individuals should have credit for their good deeds. The Romans built roads, bridges, fortresses, temples and cities such as that wild country had never known. Roman merchants brought goods to Germany and took home amber, furs and slaves; and such became the fancy of the Romans for Germanic notions, they bought the long light hair of the "Teutones" and made wigs of it.

But to return to the Goths; during the year in which the Romans were praying for peace, they built a fleet of boats upon the Black sea, and for some years ravaged the coast of Greece, devastated Troy, destroyed the temple of Diana at Ephesus, and threatened Italy. Gallienus now held the imperial office and roused his people against these barbarians, driving them away. But they only wanted to equip themselves more strongly and in 269 A.D., they started out in formidable numbers with a vast armament and made a halt at Thessalonica.

The Emperor Claudius was a most able general, and in three mighty battles he defeated their vast host of 300,000 people and sunk or captured their fleet; the survivors fled, and amid the mountain passes of the land they had come to destroy perished of starvation. Aurelian, who wore the Imperial purple after Claudius, in 272, ceded the great province of Dacia to the remainder of this people, and for fifty years they were tolerably quiet. Now they began to be known as two separate races, namely, the Ostrogoths, living upon the shores of the Black sea, and the Visigoths who dwelt upon the banks of the Danube and in Dacia. When the Huns came down "like the wolf on the fold," threatening even the fierce Goths with extinction, 200,000 of them were allowed by Valens to settle in Moesia and were afterward known as the Moesia-Goths. That the Romans were deeply wrong in their treatment of these rude nations may plainly be seen. When the Moesia-Goths outgrew their territory and their lands could not furnish them sufficient food, so that they were starving, the Roman rulers bartered with them giving "ten pounds of dog's flesh" for a child to be used as a slave. And once a Gothic prince was invited to visit the Romans, and while eating they fell upon him and his followers, and would have murdered them had they not bravely defended themselves. This afterward led to a war when the Emperor Valens, being defeated and wounded, concealed himself in a hut, and the Goths not knowing this, set fire to a group of such buildings and the Emperor was burned to death, 378 A.D.

German histories call the Goths "the noblest and most civilized of German tribes." They early adopted Christianity, and their bishop, Ulphilas, translated the Bible into their language, and their feelings and manners were much softened by his ministration; they engaged in agriculture and advanced in civilization.

One name that becomes especially famous among the Visigoths was that of Alaric, a king whose name appears in the historic annals of the fourth century. Angry at having been denied the com-

mand of the army of the Eastern Empire, he invaded Greece. Athens saved herself by ransom; the Emperor Arcadius frightened by their ravages, hoping to win their friendship, appointed Alaric governor of Illyria. Invading Holy Land in 402 he was bought to leave the country by a promise of 4,000 pounds of gold. Not receiving the sum agreed, he invaded Rome, and only departed upon increased promises of increased sums of gold and silver.

Whether he was not paid all of this ransom, although the people melted all their ornaments and silver from the temples to do so, or whether he broke faith, is not told us, but he seized upon Rome, in 410, and his soldiers were allowed to pillage the city for six days. Their only restriction being, that churches and religious institutions should not be dishonored. From Rome he went to Sicily, but a storm destroyed his fleet and a few months later Alaric died. His people buried him, fully armed, with his war-horse, beneath the bed of a river, and put to death the captives who had assisted them, in order that his burial-place should not be dishonored by their foes. All Italy rejoiced at his death, and Rome celebrated the event with great festivities; yet Alaric was less fierce than his followers and wished to preserve the mouuments and magnificent buildings of the "Holy City."

Among his successors, Wallia made the most conquests, and unfurled his royal banners over the greater part of Southern Gaul (now France) and Spain.

King Euric, the fourth chieftain after Wallia enlarged their dominions and made a regular code of laws for his people, encouraging all the arts of civilized life, as known at that time, but the Visigoths had lived their day almost to its close. Their rule was soon confined to Spain. Their nation was preserved until 711, then came the Saracen, and the last Visigothic king, Rodridgo, fell fighting for his kingdom on the battle-field of Xeres de la Frontera.

The Ostrogoths, meantime had desired the Emperor Valens, to permit them to settle in Roman territory, but their request had been denied, hence they became enemies of Rome and kept up almost continued warfare. Theodoric, their most noted sovereign, after years of battles reigned as Emperor of Italy, until his death in 525. His Ostrogothic kingdom besides Italy, included the lands between the Rhone and the Danube. After the death of Theodoric, the Emperor Justinian tried to regain Italy for the Eastern Empire, which had as its imperial city, Constantinople. The struggle continued some years; at length the King, Teias, was slain and his head born in triumph upon a spear. The Ostrogoths, now scattered as a nation, were absorbed in the crowd of tribes that had come to find homes in the northern Roman territory.

Somewhere about the year 375, while the Emperor Valens, reigned at Constantinople, over the Eastern empire, and his nephew ruled the Western empire, a new, savage tribe, of Asiatic origin allied to the Tartars, broke into Europe, sweeping forward like a wild human tempest. An ancient writer described them as so broad, thick and mis-shapen, that they appeared rather as two-legged monsters, or great logs hewn out roughly to support bridges. And further said that as deep cuts were made in their cheeks and the wounds cicatrized, to prevent the growth of beards, they were disfigured and beardless. They ate roots of wild plants, and half-raw flesh and lived wholly out of doors, clothed in skins of animals sown together.

Their rough boots would not permit their walking freely, hence they moved always upon horse-back. Their women lived in wagons and wove coarse linen cloth for their garments; they wandered continually, and had an insatiate passion for booty.

They are described as dark in complexion, with small, black, deep-set eyes. The Goths said "They were the pro-

geny of witches and infernal spirits, swift as lightning." They swept into battle with a horrible howl; they rushed forward, then back, now hither, now thither, with such inconceivable rapidity that they bewildered their foe and threw them into the utmost confusion. They were armed with the javelin and the sabre.

Their original home had been the wild, barren lands lying north of China. They were of an ancient family of nations, having been known as early as 200 B. C., when they made a succesful invasion of China. This swarm of wild creatures, who might have been the originals that gave rise to the fables of the Centaurs, now rushed into the land of the Goths, and drove all before them. That brave old Gothic warrior, Hermanrich, now an hundred years old, seeing that he could not resist this horde, killed himself in wild despair. The Goths, driven from their houses, applied to the Emperor Valens, and he gave them Moesia, for which they promised to protect and defend his frontiers. For fifty years the Huns remained quiet pursuing pasturage and hunting, though making frequent plundering incursions into other territories, in a way quite simular to the Scottish Highlanders. Through intercourse with neighboring peoples their manners were much improved.

The most noted sovereign of the Huns was Attila, surnamed "Godegiesel, the scourge of God." The ferocious of all tribes, Vandals, Ostrogoths, and Franks, fought under his leadership. By his mental power and force of arms he extended his sovereignty from China to the land of the Gauls, and even invaded their domain in 451. At Chalons they met the combined forces of the Romans and the Visigoths. Theodoric the Gothic King fell, and the army, fired by revenge, swept from a height upon the enemy in the plain, and with frightful slaughter, routed their dreaded enemy.

Attila gathered all the combustible material in his camp into one immense funeral pile, choosing rather to die by flame than to fall into the hands of the Romans. But they, wishing to preserve the "balance of power" among the nations allowed the Huns to go free. The following year Attila laid waste all nothern Italy. The inhabitants fled to the fastnesses of the Apennines and Alps, and the Adriatic lagoons, where they laid the foundations of that "City of the sea," Venice. Rome would have fallen into their power, had not Pope Leo I. visited Attila and interceded for the Romans.

Attila was not the complete demon that he was represented by his enemies; he was kind to those whom he took under his protection, and in times of peace, sat in his judgment hall and meditated or judged calmly and dispassionately between all who sought him.

With splendor all around him he was plain and simple in life; to others he furnished gold and silver dishes, while he ate only from wood. While others laughed, jested and made merry, he was grave, and reflecting.

In 453 amid preparations for invading Italy he suddenly died. He was mourned widely by his people, who cut themselves with knives to show their despair. It is told that they placed him in a three-fold coffin, his body being put in a golden casket that was encased in one of silver, that again in one of iron, and in the midst of a wide plain, beneath a canopy of silk, he lay in state. Around him circled his horsemen, singing his valorous exploits. Then with his richest ornaments and arms, he whose name and fame are commemorated in German legends as Etzel, a ruler and not a foe, was buried so carefully that no sign of his burial-place was seen, and they who had laid him away were slain, that none should betray his last resting-place. But few years elapsed before the kingly power and their existence as a separate people passed away, and the head of Attila's son adorned a pike at Constantinople.

VERONIQUE PETIT.

A MAGIC LAMP.

THERE is a fabled story, that in a deep, subterranean cavern in China, there once lay hid a magic lamp, the possession of which would render the owner more powerful than any prince in the world, and when a genius led the boy Aladdin to find this concealed treasure, he was made supremely happy.

By simply rubbing this lamp genii and fairies were made to appear before him, ready to do his bidding, to grant any request he might make. Through its instrumentality were brought to him richest treasures of jewels; about him grew trees laden with large and beautiful fruits of adamants, glistening white pearls, red rubies, green emeralds, blue turquoises, purple amethysts and yellow sapphires. Love and beauty dwelt in his home, and his life was filled with happiness.

I had read this Arabian Night tale and was wishing that I could fall asleep and dream it all to be a reality, when very unexpectedly, a bright little fairy came hopping to my side and began whispering in my ear, and I will tell you some of the things it whispered. It said: "Oh you big, stupid creature, don't try to dream your life away, but wake up and make use of your own magic lamp. You want to say that you haven't one, but you have, and it is even more wonderful than the one owned by Aladdin. You need not feel vain over it, either, for I tell you that every human being can be the owner of just such a lamp; but the people don't know it, or if they do, they have no appreciation of the lamp's intrinsic worth. You would say that you never saw any such lamp; of course you never did, but you can feel it in your heart, for that's what it is, and if you would only keep its light shining, you could see most magical effects wrought upon everything around you.

Oh, you great, blind giant, if you would only keep your wondrous lamp glowing you need not be in such dismal gloom; but you would see things in a clear and true light. You wonder that you never guessed there were such lamps; it is because so many keep them hidden under some filthy covering or other of earthly dross so they can't give out their light, and nobody knows that there is such a wondrous lamp hidden therein. But by a wise digging about this lamp could be searched out, rubbed up, and made to throw out such shining rays of sunny light that would illumine the whole being, and he would find himself enriched with finer gems than all the precious stones possessed by Aladdin. And from the person would go out a power of more value than that of earthly kings; for to him it would bring stores of richest jewels: rubies of esteem, emeralds of kindness, turquoises of trustfulness, amethysts of friendship, and pearls of love. The light from this lamp is like rays of sunshine; and as the flowers of earth open and bloom in joyous smiles of welcome to the sunbeams, so may the flowers of purity and truth in some soul, that has been so trampled upon by the heels of adversity and crime that not even one solitary green leaf of good can be discerned, be made to put forth renewed vigor and life when brought under the warming rays of some kindly heart; and soon fair leaves and beautiful sweet blossoms of genuine worthiness fill the atmosphere with fragrance. Sometimes these lamps are smothered beneath loads of folly and wickedness; deep sadness may cover them or dark despair, sorrow or morbid melancholy may encompass them; or the chilling winds of adversity, or the keen, cutting blasts of anger and hatred may blow out all the light within; or the light may seem turned to blackness under loads of worldly cares, ambition or avarice.

I am only a small fairy as you see, and my name is Conscience. I have a cousin named Duty, and if you will allow

us we will come some day and help you dig out your magic lamp. It is called Christian Cheerfulness and then the fairies Faith and Trust will come and live with you, and they will bring sparks of love, truth and wisdom wherewith to keep your lamp lighted; and fed by the oil of true goodness it will illuminate the whole path of life and help make clear the way to others; and in the great hereafter there will be one more shining light making glad the heavenly city.

"This lamp gleaming with brightness will radiate through every nerve and fibre of your being, lighting up the countenance'; and 'a cheerful face doeth good like a medicine.' The rays of worth and goodness that emanate from such a heart's lamp will be a perpetual influence for good, helping to brighten, mould the character, and make better all upon whom they shine. If you will only have us fairies come and live with you; sometime we'll bring you a prism to dissect the rays of light from your lamp, and you will see the spectrum to be composed of the most delightful colors."

While talking, this impertinent fairy had come out and stood right before me and spoke in so rapid a manner that I could not get a word of reply in edgeways. Now it seemed to stop for want of breath; but when I opened my mouth to make answer, as if fearful I might swallow it, the fairy nodded hastily and disappeared.

But I am going to call this strange little fairy back again to help search out my magic lamp, and then I shall insist upon the whole tribe of charming fairies cousins, uncles, aunts—all of them—to come and make their home with me and help keep my wonderful lamp shining with all possible brilliance; and then I shall have them show me all the beautiful colors in its spectrum.

"ERRO."

SHOULD SILVER BE DEMONETIZED?

A BIMETALLIST'S VIEW.

SHOULD silver be demonetized? Of course not. Why should it? Can any one tell? There is no proof that it shall be; much less that it should be. (I am speaking from a world, not from a national standpoint). Though there is a power "among ourselves" that may desire to work this unrighteousness, there is also a power in ourselves that, working in unison with the "power not ourselves that makes for righteousness," will thwart this evil design. Science, truth, and the right have become too strong for empiricism, error, and wrong. The reign of science has begun. Science and truth to the front; let the rest retire, with or without pension, only so that we may get rid of them. "Enlightened self-interest" even will carry us thus far.

So much by way of preface and as a ground for justifying consent to discuss the question at all. The other side assumes the affirmative. *Prima facie* the case is all one way. Silver has always been used as money. We might rest here until the plaintiff proves, or attempts to prove, his case, or "shows cause" why silver should be proscribed. It is understood that this is not a question between the bullionists and antibullionists, but between the monometallists and the bimetallists. The general and larger question of money is not involved, only this: So long as we use the specie-basis system, should we confine ourselves to one metal or use both, as we always have done? The bankers, the creditor class, the money mongers, attack silver. Why? The question answers itself upon a moment's reflection. Selfishness, self-interest, unenlightened self-interest, is what inspires them. Their argument is therefore one-sided, biassed, strained,

fictitious, unprofitable. Monopoly, monopolizability would decrease the quantity on the false pretense of increasing the quality. They catch at catchwords and resort to chop logic. "Double standard," ah! what a lucky chance! and they chuckle over it as a discovery of the vulnerable point in the heel of Achilles. This unfortunate ambiguity is their strong point. They catch at it as a *lapsus linguæ* (which it is) of their opponent. They rely not upon the merits of their cause, but upon taking advantage of a technicality, of the careless phraseology of the bimetallists, who, finding the phrase in use, inconsiderately adopted it, but are now abandoning it. Double standard! cry the monometallists, how can there be two standards? The idea is absurd; therefore bimetallism is impossible. It does not stagger them that the bimetallists reply, that bimetallism has been already the practice, the fact, of the ages; has always been not only a possibility but an actuality. But it is not upon facts that monometallists rely, and tnerefore facts do not affect them. They are like the juryman, who, when he and the facts did not agree, said that it was "so much the worse for the facts."

By a play upon this phrase they sophistically glide from it into the other phrase of bimetallism, and thus attempt to make them appear as synonymous, so that, by cutting off the head of the one they may seem to cut off the head of the other. They also act like children in the matter, making "double standard" their "bug-a-boo" in the play. They play us a farce because they have nothing better to offer.

But bimetallism, of course, is not synonymous with double standard. It has no necessary connection with the idea, even, of a double standard. It means that the two metals act or serve together as a unit, much as the union of metals in the pendulum of a clock acts, the one compensating for the other in their respective expansion and contraction, and so preserving the stability of the length of the pendulum itself. Or as two connected reservoirs of water which are kept level with each other, and are so far made to act as one by the connection or jointure, and together serve our wants. Bimetallism masses the two metals, and thus makes a broader, sounder and safer foundation for the paper or fiduciary currency, in the proportion of two to one, and, of course, compared with monometallism, it makes double the volume of metal money itself. Monometallism, therefore, means contraction, which produces spoliation which involves the exploitation of the many by the few, which means the money-mongers, the gold-bugs, as vampires, sucking away the vitality of industry, the life blood of the laboring masses. It means retrogression, not progression.

Mankind is a solidarity; the interests of the whole best serve the interests of all its parts. What makes the "dangerous classes" of either of the upper or lower orders? Who are the dangerous classes? First, those who feel themselves to be above, different and separate from the mass of mankind, and act accordingly, regarding themselves as the elect, who ought to be the privileged class and lords of the race, treating the "remnant" thereof as their tools, serfs, lackeys and victims.

Second, those that are made to feel that they have not a common interest in the affairs of the world; have not a common interest in their mother earth with the rest of her children; have not a joint interest in the earth as an inheritance in common of the whole race; have not a joint interest in society as an organism of which they are a part, of which they are members; and have been made to feel that in all the Christian world there is no place yet for the high philosophy of Christ. Monometallism leads to these reflections.

Bimetallism tends to the reverse of all this. It means expansion, progress, growth, all around. It would equalize

the commodity price of silver with its money price, and so raise it to par with gold at the present ratio of the world, and keep it there. (For the purposes of this article, by bi-metallism is meant international bi-metallism.) And by thus raising silver to par, and keeping it there, so great a degree of stability in the value of money would be realized that it would go a long way in preventing excess of fluctuation in values, and thus the greater stability to industry itself would be secured, and at once revived—revived all over the world. And this would check, if not stop, the excessive, rapid and dangerous divergence of classes now going on, and modify, if not heal or soothe, the rancor between the two orders of the dangerous classes, and also modify, if not put a stop to the power, and perhaps the disposition for evil of each, by showing the one a better way to success, and the other a better chance of securing a rightful share in the common inheritance, the results of the world's industry, and in the results of their own labor. It would change the one from legalized wrong-doers and the other from unlegalized wrong-doers into dutiful, public-spirited and good citizens.

Germany, inflated with martial pride by a great and recent conquest, and made, perhaps, a little purse-proud by the great war indemnity wrung from France, and foolishly believing that England's mono-metallism had largely contributed to her great commercial success, sought to imitate her in demonetizing silver, and did so in 1873. This attack upon silver began and largely contributed to its subsequent depreciation, and this depreciation of silver caused the appreciation of gold, which in its turn caused the fall in prices, which brought about the consequent falling off in business and stagnation in industry all over the world, and in that condition of stagnation we have been ever since; and we may remain in it until there is an international agreement to rehabilitate silver on terms of a given ratio—say 15 1-2 to 1—by reopening the mints of all the contracting parties for the coining of silver upon the same terms on which they coin gold, and making it, as well as gold, unlimited legal tender. But Germany has since been convinced of her mistake. The International Monetary Conference, held in 1867 in Paris, which sought to secure uniformity in money, made a great blunder in concluding that this object could best be secured by resorting to gold mono-metallism. This blunder was soon discovered, admitted and repented of. The two subsequent similar conferences aimed at stability in the value of money. And though they did not reach an agreement as to the method of securing this end, they made as much progress toward it as could have been reasonably expected, and there has since been large and sure growth in this direction, through our own and other international bi-metallic movements and agitation, and through the writings of the new and freer school of economists, better and later (and better because later) informed than the old school. The latter seems to have a sort of flesh-pot, Esau-like attachment to gold mono-metallism.

The rise and fall of nations have had much to do with the expansion and contraction of money. Rome grew and flourished while tribute money flowed into her lap. Rome declined and fell when it flowed out again for foreign luxuries. The world has advanced in civilization, or has fallen back in barbarism, according as there has been a sufficiency or deficiency of money. Progression and retrogression are companions to enough and not enough money.

W. M. BOUCHER.

AN AMERICAN BIDDER. It is said by the Cincinnati *Enquirer* that about four miles east of Owingsville, Ky., a man lives who is a prodigy. This man is Reuben Fields, and he has but one developed faculty, and this seems to take entire possession of him, driving all other

thoughts from his mind. In early infancy he was apparently much as other children, but in early youth he developed a wonderful precocity for mathematics, even then, solving difficult problems with apparent ease and with but little study. This became a mania with him and grew as he grew, to the exclusion of all other branches of thought, until finally, without knowing a single figure or letter of the alphabet, he became master of the science of mathematics. He has been tested by scientific men of this profession, and the answers to the most difficult problems that they have propounded appear to be at his tongue's end, the correct solution being given in an instant.

As an instance of his remarkable powers, he has been known to keep more than a dozen clerks busy in taking invoice of a stock of goods. Indeed, his knowledge and application of the science of mathematics far exceed anything that the most scientific men are able to comprehend. Another phenomenal characteristic of this man is that he can tell the time to a second, either day or night. Awakened from the soundest sleep he can tell you, without hesitation, precisely what time it is. What Blind Tom is to music, Reuben Fields is to mathematics; and, like that illustrious imbecile, this one branch absorbs his entire mental capacity.

Another peculiarity of Fields is his utter fearlessness of snakes. In his childhood he manifested a fondness for these reptiles, and made them his playthings, and, strange to say, he was never bitten, though he handled with great carelessness and freedom the most poisonous species. He is very superstitious, and believes his extraordinary powers direct gifts from his Creator, and says that were he to reveal the secrets, or use them for the purpose of gaining more than the necessities of life, he would expect to be deprived of them immediately. He has more than once refused offers of handsome salaries. His parents died some time ago, since which time Fields has been roving round among his kindred, staying with each, a greater or less length of time, according to the nearness of kinship.

THE PICTURED ROCKS OF IOWA.

PRAIRIE du Chien, Wis., is a town containing between 3000 and 4000 inhabitants. It is situated on the Mississippi River, at the mouth of the Wisconsin River. A few miles back is a line of bluffs.

We arrived in the above town one rainy day last summer, with the intention to ramble a little in the vicinity. A few days later a party of six planned a trip to the Pictured Rocks, which are on the Iowa side of the river, a few miles below the town of McGregor.

We went in a row-boat, and Uncle Longfellow (who had an appropriate name, being 6 ft. tall) agreed to do the rowing. The river on the Prairie du Chien side is full of islands. We went down about two miles among these islands. An artist would have found plenty of interesting points to keep his pencil busy along the way. Now would appear a group of trees with water lillies in bloom at their feet; then some scraggy monarch, who had seen the river frozen scores of times, but was full of artistic beauty. We then crossed to the Iowa side. The Pictured Rocks are situated at the end of a gorge between two bluffs. On arriving at the Pictured Rocks we had a really beautiful scene spread before us. The side of one bluff is covered with trees, flowers innumerable, and luxuriant ferns waving in the light breeze. On the other, we have the Pictured Rocks reaching to about twenty feet in height, their surface marked with every shade of red in ripples, dots, clouds and fantastic shapes, and mottlings of white and

yellow. At our feet a brook trickled down. The trees were full of birds singing with all their might. It would seem as though they were rejoicing at the beautiful scene before them. The words of the poet, Bryant, might well express our feelings at the time:

"My heart is awed within me when I think
Of the great miracle which still goes on
In silence round me—the perpetual work
Of Thy great creation, finished yet renewed
Forever."

The Pictured Rocks are of sandstone, which can be easily crushed in the hand when wet. Here the botanist and geologist find a good field.

Climbing up a little higher on the bluff we found the brook dropping over a ledge of rock, forming a miniature Minnehaha falls. We climbed also to the top of the other bluff, which is called Point-Look-out, said to be 500 ft. high.

A splendid view of the surrounding country is here obtained. On one hand is the town with the spires of its churches rising above the houses thickly sprinkled between. On the other are fertile farms, and in the distance the other line of bluffs, with the river winding through.

JAMES THORNE.

THE TWO ANGELS.

FROM THE GERMAN.

Darkness falls. The voice of day is dying,
Twilight slowly creeps across the sky.
Lo, two brother angels earthward flying—
Sleep and Death—with errands from on high.

One of them, in heavenly beauty glowing,
Scatters grains of slumber far and wide,
Which the rising breezes gently blowing
Waft from house to house on every side.

Soon the weary all are soundly sleeping;
Pain at last the bed of sickness flies,
Sweet repose has hushed the mourner's weeping;
Kind oblivion closed his tearful eyes.

Now the aged, weary, care-o'erladen,
And the infant on his mother's arm,
And the ruddy youth and blooming maiden
Sweetly rest without a thought of harm.

"When they waken, brother, they will gladly
Praise me for the good which I bestow."
"None to me," the other answered sadly,
"Thanks will render. I am called their foe."

"Nay, for all the good will praise thee, brother,
When unto a brighter life they rise,
When their blessed spirits meet each other
In the shining fields of Paradise." H. A. S.

A TIRED-OUT PEOPLE.

DAY after day one meets weary-looking men and women, with faces so wan and haggard that pity is the only instinct, and not till we have said "Poor things, how badly they look!" are we ready to question, why are they so?

Demands of business, exacting climate, over-work and general pressure in every direction has heretofore satisfied us as an answer, and in this as in a thousand other matters we have folded our hands quietly, and been content with merely wondering if any remedy lay within our power. In the meantime however, an enthusiast has been at work. Thank Heaven we are not yet too tired out to produce them, now and then, and that some of them will let Protoplasm alone and condescend to investigate the plasms of every-day living. He claims to have discovered a new substance in the blood—a curious something called "Fatigue material," and generated by over-action of muscles and nerves. This enemy to sound growth and repair of wasted tissue can only be destroyed by the action of the oxygen of the blood during sleep, and it is asserted that our national ner-

vousness and restlessness comes from the fact that we do not sleep enough to insure the destruction of this ever-feeding vampire. Thus far the statement can hardly be said to have been scientifically formulated, but whether true or not, the fact remains that we take only about half the sleep actually required.

That our ancestors in some points were far more robust than the present generation, came in great part from the fact that only the rarest occasions of business or pleasure kept them out of bed after midnight. Now, young men and maidens, old men and children sin alike. Nine o'clock may be the children's hour, but what average American mother does order her fifteen-year-old son or daughter to bed at that time? A shriek of remonstrance goes up. School-girls must study. At least they call it study, but often the novel shows its seductive pages behind the grammar or dictionary. Parties, theatres, concerts — all make their demands, and every call is heeded save that of poor Sleep, whose first sweet bloom fades after midnight, as she flits away among the melancholy ghosts, with shrouded head and hollow voice crying: "Custom hath murdered Sleep."

Tired mothers and house-keepers who seek to meet all the demands of this most exacting time deserve only pity, and yet a shade of reproach must mingle with it, for is not the remedy nearer than they think? A little less ruffling and tucking, fewer pies and cakes, fewer tidies and specimens of bead-work and all other works. It is these things that help to kill the nursing babies, and a thousand times more surely than marasmus and scarlet fever and other disorders whose name is legion, but should be only sleeplessness.

Like the young man, the significant odor about whom was apologized for on the ground that he "inherited the smell of whisky from his father and couldn't help it," so the present generation inherits chronic fatigue and is not responsible for it. But for the coming one they are. The climate *is* exacting. The demands on even, quiet, ordinary living are enormous; its temptations equally so. Tired nerves are spurred to activity by sensational methods. Life becomes false, unnatural, full of vain strife and hopeless hunger. Then follows some great crime, and men wonder. Daily they are growing more common. There is faithlessness in high places, cunning and trickery in the soundest-seeming institution, unnamable crimes where one looked for honor and faith. The poison is working more deadly, as it is more subtile than anything more tangible. If sound nerves and bodily fibre are eaten up by its action, how is high purpose or faith to remain unharmed? There is not a mother in the land who should not take this to heart, and with the gospel of cleanliness and simple living preach also that of sleep.

Emergencies demand its sacrifice at times, and how can one make the offering with no reserve force to draw upon? The present time requires later hours, but let the need of pleasure or work be the exception and not the rule of living. Nature will have her revenges, and the time comes when poisoned blood and nerves sink the poor body in a deeper slumber than human power can bring. Well, if the Master's voice, "Sleep on now and take your rest," does not rouse one to the bitter knowledge that the body has been betrayed into the hands of its enemies and there is no place left for repentance, seek it with bitter tears as we may.

C. W.

A TIDY, neatly dressed workman is generally careful, neat and quick about his work, while a slovenly dressed man is too apt to be careless or idle; or smoke in the shop when the employer is absent. In Vienna, at the Exposition of 1873, twelve to twenty cents more a day was given to workmen who wore leather shoes than to those who wore wooden clogs or went barefoot.

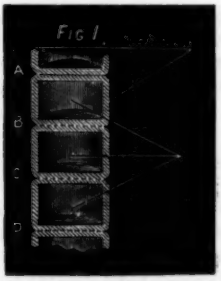
NEW THEORIES OF MUSCLE ACTION AND NUTRITION.

ABOUT two hundred years ago, Prof. Giovanni Alfonso Borelli, a mathematician and physiologist of Naples, Italy, proposed what seems to have been the first theory ever advanced in explanation of the construction and action of the muscular elements. To my mind his views seem obviously incorrect, and yet Prof. Marey of the College of France says: "We do not reason otherwise now that histology has shown us in a muscle a bundle of fibres whose actions are combined like the chains suggested by the Naples professor." (Animal Mechanics, page 63.) Professor Marey's book was published in this country eleven years ago, and, notwithstanding the wonderful progress that has since been made in the various branches of medical science, it appears that nothing has yet been offered on this subject which can be accepted as a correct, or even a more satisfactory solution of this problem.

Being deeply impressed with the importance of correct information on this subject during the preparation of a lecture embodying some important, discoveries in Health Science, I at once instituted a careful examination of the phenomena connected with vital activity, and succeeded in obtaining results which are, to me, of a most gratifying character. I have thus been enabled to offer in the fullest confidence of their truthfulness, not only the following theories concerning the mechanism of the muscular elements, and the modus operandi of their action, but also what seem to be valuable hints relative to the source and development of nervous energy.

OF THE VOLUNTARY MUSCLES.

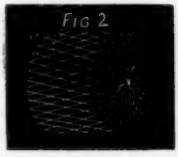
The elements and the mechanical arrangement of a primitive muscular fibre of this kind, as they now appear to my mind, are well represented in longitudinal section in Fig. 1.



The sarcolemma, or exterior walls of the sarcous elements shown; also the broad striæ or nutrient cavities of the elements. Points of attachment or septa, A, B, C, D.

That part which is here termed the sarcolemma, *is not a fibrillar sheath as it seems to be*, but is in reality an aggregation of the exterior walls of a series of sarcous elements, joined together end to

end. The point of juncture is indicated by the dotted lines at A, B, C and D, of the foregoing figure. The sarcous elements are simply hollow, cyclindrical chambers, provided for the storage of nutrient materials, and these recesses are made prominent to view by their contents appearing as broad, dark, transverse striæ. Their walls are formed of reticulated, non-elastic filaments, the meshes of which are most likely covered in with a film of elastic membrane. These filaments have a common point of origin in the center of one end of the element, and a common point of insertion, as it were, in the opposite end of the same, as shown in Fig. 2.



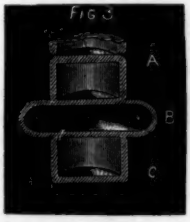
During muscular repose or relaxation, this network is fully extended longitudinally, so that its meshes appear to be almost obliterated on account of the close proximity of their lateral angles. Each element so constructed is firmly attached by the full extent of its flattened polar surface to the corresponding surface of the next member of the series composing the fibril—the ends so attached constituting as it were, a transverse partition in a tube, as shown at A, B, C and D, Fig. 1.

Two elements thus attached may be fitly represented by two cylindrical pill boxes pasted together, end to end, the two heads jointly representing the partitions or septa just described.

A slight depression exists at the juncture of each pair of elements, the optical effect of which no doubt led Krause into the error of supposing it to be a transverse membrane. This is what is called by anatomists "the membrane of Krause." The light band observed on each side of the shaded line, marking this depression, is produced by transmitted light appearing through the disk-like poles of adjoining elements.

A number of sarcous elements joined together as just described, constitute a muscular fibril, which is practically a long tube divided into minute chambers by septa of non-elastic filaments radiating from the center of the septa, as already stated, and thus forbidding their diametrical expansion.

From a careful study of this mode of construction, it may be clearly seen that on account of the peculiar arrangement of the network of each element, its exterior surface is open to free lateral expansion, while its longitudinal extension is an impossibility. Since the external surface of each element is practically a straight line which cannot be extended, and since a straight line is the shortest distance between two points, it is evident that the lateral expansion of such a surface must cause it to bulge outward, thus forcing the septa into closer proximity, and effecting the contraction of the fibril, of which it forms a part. This fact is made fully apparent by examination of Fig. 3, for the longitudinal section of a sarcous element of this variety exhibits a rectangular outline, as shown at A and C in this figure.



The dotted lines at each end of this figure exhibit the amount of contraction effected by the expansion of the middle elements.

This fact may also be exemplified by a flexible wire formed into a square and the ends firmly soldered together. By forcing opposite sides of this outward the other two sides will be made to approach each other.

Besides these methods of demonstration I have devised what might be termed a performing manakin which completely and beautifully verifies the rationale and feasibility of the mechanism now suggested.

OF MUSCLES OF ORGANIC LIFE.

It is very evident that sarcous elements constructed on the plan now submitted, are eminently suited to the wide range of force and the rapidity of action required of the voluntary muscles and of those of the heart. But it is reasonable to suppose that elements of a different form would be better calculated to produce the very dissimilar character of movements required in the performance of the functions of animal life. And we find that conclusions suggested by rational processes, are fully corroborated by the revelations of the microscope, for by its aid it has been determined that all muscles of this class are composed of elements, the greater diameter of which is about the center, each end tapering down, like a spindle, to a point. These are said by Professor Gray to be polyhedral, a description which, by the way, is entirely too indefinite to be of much value. For obvious reasons a transverse section of an element of this class must, as a rule, present some one of three forms: a triangle, a quadrangle, or a hexagon. Could a complete transverse section be made of a thing so pliable and of such diminutive proportions, without changing its outline, and were this examined by a microscope of sufficient power, it would doubtless be found that, with certain necessary exceptions, it would present a hexagonal outline, and as a whole twelve sides or facets as shown considerably expanded in Fig. 4.

Elements of this form would necessarily overlap each other, above, below, and laterally; and viewed at a right angle to their plane would collectively appear somewhat like Fig. 5.

In this figure each fibril is removed from contact with its fellow, so that a clearer view may be obtained. A long, tubular net, with a film of gum-elastic covering in its meshes, and then constricted by ligatures as at A, B and C, Fig. 5, would give the best illustration of the essential points of construction.

Fibrils of this kind are also striated, but their striations are longitudinal. From this fact, and the form already suggested, we are led to conclude that elements of this class are composed of seven compartments—one central with six others arranged around it—their striæ being due to their nutrient contents appearing through their translucent walls. A transverse section would present the arrangement of these compartments as shown in Fig. 6.

The members of this compound element are no doubt separated from each other by a network arranged in harmony with that described as the exterior wall or investment of the entire element. As in the former variety, so in this—they are free to expand in a transverse direction, but cannot be further extended longitudinally. The inflation of such an element must therefore increase its diameter at the expense of its length, and thus produce contraction as certainly as in that form of element first described. It seems plain enough that their elongated, tapering form, with this overlapping ar-

rangement, are structural points, eminently fitting them for the production of the peristaltic motion of the alimentary tract, for the movements of the visceral organs, and of the walls of all of the various members of the vascular system.

MUSCULAR CONTRACTION—HOW PRODUCED.

Of course the foregoing theories, however true to mechanical principles, would be valueless if the means for producing the expansion therein suggested did not exist in the bodies of animated beings. I now, therefore advance the following theory, as complimentary to the foregoing, and in the fullest confidence that it will be accepted as adequate and satisfactory on this point.

The opacity which gives rise to the striæ noticed in the fibrils of both varieties is due, as already stated, to nutrient materials stored away ready for use within the recesses of the sarcous elements, as seen through their pellucid walls. These nutrient matters are derived wholly from the peptonized albumen of the blood, and are therefore of organic origin. They are the bearers of the force needed, and manifested in all vital operations. The contents of the sarcous elements are therefore of a very perishable nature, and being also laden with oxygen—probably as a mechanical admixture—they necessarily occupy a position of such delicate instability that only a very slight nervous impulse would be required to cause their chemical union with the oxygen. Such an impulse must therefore be followed by the oxidation of the contents of every element penetrated by it. The most prominent result of this chemical process is the evolution of carbonic acid gas,* while expansion of the sarcous element is a necessary concomitant.

Since it is an established principle that motion is determined in the direction of the least resistance, and since the sarcous walls can not be extended, and yet are open to lateral expansion, it is evident that the gas evolved must necessarily produce the bulging effect and the consequent contraction illustrated in Fig. 3. Carbonic acid gas and all other products of this vito-chemical process being freely soluble in the vital current are quickly absorbed into the blood of the contiguous vessels, and relaxation of the muscle thereby effected. While these effete matters are being discharged from the elemental cells by osmosis, these recesses are simultaneously replenished with fresh supplies of nutriment by the complement of the osmotic process; thus consummating the important process of nutrition, which alone can fit them for further action.

It may now be clearly seen that when food is once stored in the sarcous elements it is properly situated for the production of mechanical results—there being, as it were, a proper fulcrum upon which the force may be converted into motion. And it is equally clear that when thus situated, it is under such complete subjection to the nervous system, that through the mandates of the will, or of the vital instincts, it may be compelled at any moment to yield its force in the simultaneous production of animal heat, muscular contraction and motion. Be it therefore ever remembered that force liberated from materials by their oxidation, effected while remaining in the blood, is a complete waste for the want of a basis of action, and that even the heat, evolved in this way is not animal heat, but on the contrary is essentially that of fever.

THE SOURCE AND EVOLUTION OF NERVOUS ENERGY.

It will be readily admitted that the albumen elaborated from the food is the immediate source of muscular power. In such an admission the fact is virtually conceded that a *material substance* is the vehicle for the conveyance of an *immaterial force* to the muscular department or animal organisms. And I can

* I use the old name as it will be better understood by the non-professional readers of the article.

conceive of no reason which forbids the assumption that the *immaterial nerve force* is likewise of *material origin*, and that it is also produced by the metamorphosis of albuminous matter. And such an assumption is apparently well supported by the fact that albumen abounds also in all the organs of tactile sensibility, in all the nerve cells, in the axis cylinder of the nerves, in the ganglia, in the cerebro-spinal axis, in the cerebellum and in the gray matter of the cerebral convolutions. It is a fact of special significance that every Pacinian body, or other nerve ending, whether central or peripheral, is literally stuffed with albuminous matter inclosed in an insulating capsule which is continous with the neurilemma, or nerve sheath. In these and in all other situations in which it is found in the nervous system, it is divided into granular particles which appear of exceeding fineness, even when viewed by the most powerful microscope. It may therefore be legitimately inferred that in this department it is much more intimately incorporated with oxygen than that which is stored in the recesses of the muscular system. It may be consequently further assumed that its instability is here so delicately adjusted that the slightest stroke of a Pacinian body, or other nerve terminus, would create sufficient friction to secure the oxidation of a portion of its nutrient matter, and the evolution of a nerve current of ample power to excite a similar action in the cells which make up the cineritious portion of the brain, and thus direct attention to the part touched. Carrying this thought a step farther we may also conclude that if a stroke be received of sufficient gravity to jeopardize vital interests, the law of self-preservation will be called into action, and a special impulse — either instinctive or volitional— will be evolved from the nutrient cells of the appropriate nerve center, instigating the recoil of the affected member. Whether the experience following a disturbance of peripheral termini shall be pleasurable or painful will depend somewhat upon the intensity of the force producing the primary excitation, but principally upon the amount of nutrient matter consumed in the cerebral cells.

The nervous impulses on which the functions of organic life are suspended, are no doubt quite feeble at their origin, and they are doubtless maintained at an even degree of intensity, or reinforced, as necessity may require, by the ganglionic relays which occur at short intervals throughout the sympathetic system. Here the oxidizing process closely approaches spontaneity; for the otherwise imperceptible demands of the system are sufficient for the maintenance of perpetual action, unless interrupted by morbid influences.

It is entirely reasonable to suppose that excessive cerebral circulation would be followed by hypernutrition of the brain, or in other words, by inordinate distention of its nutrient cells with albuminous matter. Considering now the unstable character of this highly oxygenized matter, we may safely conclude that combustion may be induced by the irritation which must ensue from the crowding of nutrient matter into cells encased, as these are, within unyielding walls. In fact it would seem that the combustion is Nature's only alternative in relieving the pressure thus induced; for it must be remembered that it is now no longer floating in the blood, and therefore can not be conveyed by it to other regions. There are, indeed, the very best of reasons for believing that insomnia and various forms of insanity are due to oxidation excited in this way. It is well known that cold extremities and a heated brain are the invariable concomitants of these morbid conditions; thus indicating that the cerebral "fires" are burning with undue vehemence, while remote regions are bathed in coldness and growing weak from deficient nutrition.

From the views, now presented, it will appear that I do not accept the prevail-

ing notion, that the tissues of the nerves and muscles are actually consumed during their activity; but that, on the contrary, I regard the nerve cells and the sarcous elements as the working parts of the vital machine, the integrity of which must be preserved, and whose functions are analogous, on the one hand, to the cells of a galvanic battery, and on the other to the cylinder and piston of a steam engine. I do not hesitate to affirm that those parts are never consumed except by morbid processes, and that they are not ordinarily worn out or consumed even at death, for life's closing scene is with far greater frequency due to obstruction of the vital machinery than to destruction of its working parts. In conclusion I must say, in justice to myself, that I am not in any proper sense of the word a microscopist. Neither am I a practical histologist. In arriving at these conclusions I have therefore relied entirely upon rational processes in connection with the testimony of authors. My views, however, seem to be supported by a vast array of facts and principles of insuperable relevancy, but want of time and space forbids their presentation in this paper.

I publish these thoughts for the purpose of enlisting the scientific world in a careful and, I trust, unbiassed examination, that they may be approved or rejected as truth shall demand. The value of any theory depends upon its capability of explaining the facts which lie within its province, and I believe that these or some slight modification of them will be found capable of fulfilling this requirement. Notwithstanding that they seem dear to me at present, I must disclaim any interest in them beyond the truths they may express. It has never been my habit or desire to shield myself so impenetrably in the belief of anything that light can not reach me; nor have I ever knowingly permitted reverence for the views of others, however exalted, to lead me beyond the confines of reason, nor to deter me from investigating for myself.

I trust that all others will be equally independent; for I am fully aware that these views are in direct contravention of several theories which have long been regarded as fully established, I especially request all reviewers* to send me a copy of their productions, whether favorable or otherwise.

THOMAS POWELL, M. D.

*Exchanges desiring to copy this article can obtain the cuts by applying to the author, at Paola, Kansas.

THE FAITH CURES.

THEIR PHYSIOLOGICAL BASIS.

MUCH interest has been excited by the numerous remarkable cures which have been effected, during the past few years by the so-called faith cure. That remarkable cures have been effected, no candid person can deny. Many of these cures have been permanent, although a portion have relapsed to their former state. These remarkable cures are variously regarded by the public. Some persons regard them with incredulity, and are disposed to disparage their usefulness, by trying to show that there really was not very much the matter with those who claim to have been cured. However that may be, it is certain that enough ailed them to keep them bed-ridden for years, and it certainly was remarkable that they were enabled to leave their beds. Others regard their cures as miraculous, and altogether beyond the sphere of human agency. There are very good reasons for not accepting either of their extreme views. It is believed that these remarkable cures may be explained upon physiological principles.

FAITH MORE POTENT THAN DRUGS.

Faith is a powerful curative agent and deserves to rank along with the most

powerful drugs. Even the efficacy of drugs, is due in part to the faith which the patient exercises at the same time that he takes them. The belief that a certain effect is to follow, as the effect of taking a drug, is promotive of the the drug. I noticed the expectation of a certain effect to follow the taking of a certain substance in medicine sufficient to produce this effect, although some inert substance had been taken instead. An instance of this kind is given by Dr. Lisk, a French physician, who had a hypochondriacal patient who believed himself the victim of obstinate constipation, although in point of fact his bowels were regular. Of purgatives he had taken every form, but he affirmed, without any result. Dr. Lisk refused to give him any medicine, and was in consequence incessantly importuned, and even abused by his patient. At last wearied out, he professed to yield to his solicitations, and told him he was about to give him the most violent purgative he knew and that it would certainly render him very ill. With the greatest delight he obeyed the doctor's orders to take five pills, made of bread crumbs, an interval of a quarter of an hour being allowed between each. After the third dose the patient was well purged, and within seven hours the bowels were acted upon more than twenty times. He was jubilant at the success of the pills, but was almost in a state of collapse with the attack. From that time he began to recover from his delusional insanity.

The British and Foreign *Medical Review* of January, 1847, gives the following as communicated by a naval surgeon: A very intelligent officer had suffered for some years from violent attacks of cramp in the stomach. He had tried all the remedies usually recommended for the relief of this distressing affection, and for a short period prior to coming under treatment the trisnitrate of bismuth had been attended with the best results. The attacks came on about once in three weeks, or from that to a month, unless some unusual exposure brought them on more frequently. As bismuth had been so useful, it of course, was continued; but notwithstanding that it was increased to the largest dose that its poisonous qualities would justify, it soon lost its effect; sedatives were again appealed to, but the relief afforded by them was only partial, while their effect on the general system was evidently very prejudicial. On one occasion, while greatly suffering from the effect of some preparation of opium, given for the relief of the spasms, he was told that on the next attack he would be put under a medicine which was generally believed to be most effective, but which was rarely used on account of its dangerous qualities, but notwithstanding these it should be tried, provided he gave his assent. This he did willingly. Accordingly on the first attack after this a powder containing four grains of *ground biscuit* was administered every seven minutes, while the greatest anxiety was expressed (within the hearing of the patient), lest too much should be given. The first dose caused an entire cessation of pain. Half-drachm doses of bismuth had never procured the same relief in less than three hours. For four successive times did the same kind of an attack recur, and four times was met by the same remedy and with like success. After this my patient was ordered to join another ship on a different station.

The same surgeon gives another case in which constipation was relieved in a similar way: A seaman had suffered from four successive attacks of constipation. So far as could be detected there was no organic disease to account for its occurrence. The symptoms were such as usually follow protracted constipation of the bowels; and on four occasions large and repeated doses of the strongest purgatives (croton oil included) powerful enemas, cold affusions or hot baths had all been required to be persevered in to procure relief. On the fifth attack he was put under two grains of bread pills every seven minutes; much

anxiety being of course expressed to guard against any over-dose, as well as to watch the effect of what was then given. Within two hours he became sick (one of the symptoms expected from the medicine) and his bowels were freely open almost immediately after; nor did they become again constipated, so far as I am aware.

In these cases it will be observed that the administration of inert substances like bread crumbs in the form of pills or powders, joined with the expectation on the part of the patient of powerful effects to follow, were attended with more powerful effects than the most powerful drugs had been able to produce. If these patients could have been made to expect with the same degree of certainty, these results to follow their exercise of faith, then the same results would have followed without the use of the bread crumbs, and these would have been simple faith cures, as such they were virtually.

MAGNETIC DISKS OR TRACTORS.

Magnetic belts, magnetic disks, or magnetic tractors, have enjoyed quite a reputation as curative agents. The results obtained by the use of these are merely another form of the faith cure. Magnetism or galvanism has nothing to do with the results. At the time that the metallic tractors of Perkins excited so much attention on account of their alleged curative effects Drs. Hygarth and Falconer of Bath, England, selected certain patients in the general hospital for experiment, employing two wooden tractors of nearly the same shape as those used by Perkins, and painted so as to resemble them in color. "The cases" says Dr. Tuke "were those of chronic rheumatism in the ankle, knee, waist and hip. One attributed his pain to the gout, and with the exception of the hip case the joints were swollen and all had been ill for several months. Of five patients, all except one assured us that their pains were relieved, and three of them that they were much benefited by the first application of the remedy. One felt his knees warmer, and he could walk much better, as he showed us with satisfaction. One was easier for nine hours till he went to bed, when the pain returned. One had tingling sensations for two hours. The wooden tractors were drawn over the skin, so as to touch it in the slightest manner. Such is the wonderful force of the imagination."

Dr. Alderson, of Hull, England, adopted the same treatment: "Robert Wood aged 67, on June 4, was operated upon with wooden tractors, for a rheumatic affection of the hip, which he had for some eight months. During the application of the tractors, which was continued for seven minutes, no effects were produced, except a profuse perspiration, and a general tremor. On ceasing the application of the tractors to his inexpressible joy, and our satisfaction, the good effects of our labor were now produced and acknowledged; for he voluntarily assured us that he could walk with perfect ease, that he had the entire motion of the joint, and that he was free from pain." A large number of cases of similar import might be given to show the wonderful effect of faith in the cure of disease, assisted by substances which could not possibly have any effect except through the imagination of the patient.

PRACTICAL CONCLUSIONS.

The instances which have been given where diseases have been cured by the use of crumbs of bread in the form of pills and powders, and wooden tractors, are sufficient to show how powerful faith is in the cure of disease. If the same faith can be exerted in other directions, the same results can be obtained. If the faith is in prayer for the cure of disease the cure may result just as surely as it would if the faith was in something else that was used for the cure of the disease. Faith is an important factor in the cure of disease, and should be clearly recognized as such, and its aid called in more

generally for the relief of the afflicted. Faith will not do everything in the way of cure for every patient. Other means may be needed, but faith should be made to work with them. Where medicines are used it is well to tell the patient what effect is expected from them, so that the imagination of the patient may assist the action of the drug. Dr. Rush availed himself of the good effects to be derived from inspiring the patient's confidence in the means employed. He says: "I have frequently prescribed remedies of doubtful efficacy in the critical stage of acute diseases, *but never till I had worked up my patients with a confidence bordering upon certainty of their probably good effects.* The success of this measure has much oftener answered than disappointed my expectations."

It is not wise for physicians to discourage or ridicule the faith cures. They should recognize the curative agent there made use of, and in the future summon its aid in their own practice more fully than they ever have done. All physicians in their attempts to cure disease are assisted more or less by the faith that their patients have in them, in their skill, and in the means employed. The aim should be to call into activity more extensively their powerful agency, and in severe cases of poor bed-ridden patients whom medicine and other means fail to relieve, the faith cure should be tested to its utmost for their restoration. The influence of the mind upon the body is all powerful, and should be constantly called into service in treating the sick. Hope is one of the best stimulants and tonics. Many of the sick who have been discouraged or despondent, can be wonderfully improved by imparting hope and arousing their courage. Their blood will circulate with renewed vigor, the secretions will be stimulated, the digestion improved, and new vigor imparted to the whole system. Such a change will oftentimes turn the scale in favor of the recovery of the patient. The ability with which some physicians manage the minds of their patients and inspire them with hopeful confidence, contributes largely to their success and popularity, as well as their usefulness. Surely we are fearfully and wonderfully made and there are more wonders in creation than are dreamed of in any of our philosophies.

H. REYNOLDS, M. D.

PHILIPPE PINEL AND INSANITY.

THE *Times* of Chicago publishes this appreciative sketch of a great benefactor: One day last month a beautiful statue of white marble was placed in front of the Salpetriere hospital in Paris. It represents a kind and intellectual looking man holding a broken chain in his hand, while a young girl at his knee, with the light of intelligence newly dawning on her sorrowful countenance, holds up to her benefactor a wreath of flowers in token of gratitude. On the pedestal are the words: 'Philippe Pinel.' Not gay Paris, not vine-clad France alone, but all the civilized world is under obligation to the man to whose memory this monument was erected, largely by means contributed by persons who had been cured of mental diseases. Philippe Pinel was the father of the system of humane and kindly treatment for the violently insane. He was born at St. Andre, in the department of Tarn, in 1745, and died in Paris in 1826. His father was a country physician, and the boy showed an aptitude for scientific investigation. He studied medicine and various branches of natural science. In 1791 he was appointed director of an institution which was at once a prison, a hospital, a lunatic asylum, and a foundlings' home. The insane and malefactors were confined in the same cells or chained to the same columns. For the most part they were treated precisely alike. Like an angel of light and mercy the

new director appeared in this horrible place. He went among the inmates, who raved like wild beasts. He spoke to some of them kindly, and they became subdued. He showed no fear, but displayed much kindness. Some of the most furious of the lunatics expressed great surprise that he dared to approach them unarmed. To these he brought delicacies and flowers, and uttered kind words. In a few days all their exhibitions of violence ceased. Then he sat down by them and appeared pleased with their society.

The report of the management of the new director reached the Commune, and Couthou, the authorized visitor, was instructed to inspect the place He is described by contemporaries as a "terrorist," and utterly wanting in compassion. He was a paralytic, and it was necessary to carry him into the place of torture. On his way he declared that Pinel was about the worst lunatic in the entire crowd. He soon saw, however, that a change had been wrought for the better. On his departure he said to the director, "Do what you like, citizen, with these miserable wretches, who are not much more mad, perhaps, than you are; but if you let any of them loose, look out for yourself." Couthou reported his observations to the commune, and permission was granted Pinel to manage the lunatics as he pleased. He now resolved to make some hazardous experiments. Among the most dangerous of the inmates was a sea-captain who had killed one attendant and had been kept in irons for nearly forty years. Pinel approached him during one of his most violent fits; put his arms about his neck, and assured him that he was sorry to see a gentleman in his condition. He suggested that if he would be reasonable he would release him from his chains and take him for a walk in the garden. The furious man became subdued. In the course of an hour the director caused the chains to be taken off, and arm-in-arm they walked into the garden. For the first time in nearly forty years he saw the blue sky, smelled roses, and heard the song of birds. He fell at the doctor's feet and blessed him. After an hour he was taken back inside the building, but not to a dungeon, or to be bound in chains. He was placed in a clean room and allowed to rest on a bed. Here he slept like a child, as he was attended by his friend. In a month he had regained his reason and health. In the course of a few months he became an assistant in the care of the insane.

Pinel's next experiment was on another lunatic, one Chevigne, a soldier of enormous strength, who had more than once broken his shackles by mere muscular force. He had for more than twenty years been the terror of the establishment, and few dared to approach him even to give him food. He was an object of special attention and soon regained his reason. He was released, and during the stormy times of the revolution became a conspicuous person in Paris. On one occasion he showed his gratitude to the man who had been his best friend. Pinel was arrested on the charge of being an "aristocrat," and was being hurried by a mob of "Reds" to prison. Chevigne, himself a "Red," saw his old friend, and rushed on the men who were leading him away. He left two of them for dead and caused the others to flee for their lives.

The fame of Pinel in the treatment of the insane spread beyond the boundaries of France. Reforms in the management of lunatics, especially those of a dangerous character, date with the changes introduced by Pinel into the institution of which he was made director.

MOUNTAIN AIR.—In mild cases of nervous disturbance, in simple overwork, and mental exhaustion from worry and anxiety, mountain air is often a specific. Its tonic properties, the distraction of magnificent scenery, the purity of the air, the stillness of high altitudes, all contribute to the beneficial result.

HOT-HOUSE EDUCATION.

A FEW weeks ago many people were startled and horrified at the death of a lovely young girl, an only child, through the cruelty or ignorance of teachers who worried her into a terrible fever, which proved beyond human aid, by their unreasonable requisitions in the way of study.

It seems the mother felt anxious about her daughter's health, noticing how incessantly she was employed in her studies, and spoke to the teachers about it, thinking she must remove her from school, for a time at least, to allow her to recuperate. But the teachers wishing to retain a pupil who was an ornament to the school, and as they thought, a credit to her teachers, persuaded the mother to allow her to remain a little longer, promising that she should not be unduly urged or tasked. The mother yielded, but the promises of teachers proved delusive. The girl was a member of a class in a public school and as such was part of a great machine which must grind on remorselessly its daily grist. She must learn the lessons assigned to the class, or (terrible thought to most children) not be promoted at the next examination, lose her rank, lose the favor of her teachers, and sink in the esteem of her fellows. Nor could she be content to take a lower rank; no, she must retain her place in the class no matter whether she had any time to play or not, no matter whether she felt tired in the morning as well as at night; no matter if her head and eyes ached and she had no appetite, she must know her lessons or be disgraced. A few more weeks went on and her short, troubled life in school was forever at an end. During her delirium she raved continually of lessons, repeated by heart incessantly this, that and the other, which she had been required to memorize. Thus passed a few days and nights, and then the poor overtasked brain found rest in death.

Nor is this an isolated case. As a general rule, not only in public schools but in many otherwise excellent private schools, pupils are urged and stimulated to make the highest mental exertions during the hours of school, and then lessons are assigned sufficient to engross not only all the remaining hours of the day but which compel the children to study till bed time? What time is left for play? What time for the cultivation and growth of the physical, the affectional or the spiritual nature? And what wonder is it that the few boys who survive this miserable system grow up hard and cold, thinking less of home and social and religious duties than of the business of making money and advancing their own interests in the world; or that the girls grow up worldly and stylish? There has been no lack of mental stimulus, and now in maturer years the brain is unnaturally active, always busy devising new ways and means—for what? For relieving the poor and the afflicted? for making home happy?—not at all. No, the head has been cultivated at the expense of the heart. But:

> "It is the heart and not the brain
> That to the highest doth attain;
> And he that followeth love's behest
> Far exceedeth all the rest."

What can be expected of a school-boy who for years has spent all his waking hours in a struggle to perform his school-tasks creditably, in order that he may have as good a standing as the other fellows; whose whole thought has been of self, since no time is left him to think of others; whose school years are just a ceaseless rush and struggle for place and rank, "each one for himself and the devil take the hindmost."

To cultivate the mental faculties and not the morals and manners is to make power without benevolence; it is to make men and women sharp, quick, shrewd and active for what concerns their own interests, but hard and unloving to others; it is to make them like steam-en-

gines running off the track and bringing with them mischief and destruction. Satan himself has an acute, active brain and indefatigable diligence in securing his ends. And yet there are many teachers who seem to be perfectly satisfied if their pupils attain to quickness and diligence.

Is it any wonder that this system of training should so often result in dwarfed, selfish, one-sided natures? It is indeed no thanks to the schools but only owing to the untiring influence of good mothers that there are still left to us so many large-hearted, unselfish men and women. Next to the mother, the teacher holds the most important place in moulding human character, and in making or marring our future citizens.

The late Prince Albert showed his good sense, and his discernment of what education should be when in offering a prize at Wellington College to be given by her Majesty, Queen Victoria, he made the conditions as follows: "To be given, not to the cleverest boy, nor to the most bookish boy, nor to the most precise, diligent and prudent boy; but to the noblest boy, to the boy who shall show most promise of becoming a large-hearted, high-motived man!"

This is the true idea of education. The whole nature is to be developed and brought to its best. "Time and patience turn the mulberry leaf to satin;" so says the eastern proverb. Mushrooms may grow in a single night, but the strong and noble oak is the result of years of growth. And if time and patience are essential in the vegetable world, they are still more so in the highest of all created natures, — the human being. Nothing really great was ever attained without time. A life of continual worry, hurry and struggle is not only fatal to the growth of the soul and the heart, but it is even injurious to the healthy development of the mind.

ANNA HOLYOKE HOWARD.

VALUE OF AN ABSCESS.

A CERTAIN railroad organ thus sarcastically and humorously hits off a suit at law against a Railway Company for damages to the person:—A physician of a Western town is trying to sell an abscess upon the posterior part of his anatomy to a railway company for $10,000. The circumstances of this most interesting case, as related by an exchange, are as follows: The doctor boarded a train of the Cincinnati, Indianapolis, St. Louis & Chicago Railway in October last to go to a Democratic meeting in Indianapolis. The cars being well filled by pilgrims wending to the same shrine, Dr. Washburn went into the baggage-car and sat down not only upon an egg-crate but also upon a nail which protruded from the said crate, and entered, penetrated and pierced that portion of the doctor's body which must necessarily come into use if one sit down at all. It further appears that the railway company had negligently omitted to scour this nail with brick or sand paper, and had permitted it to become rusty. The result of the puncture, it is alleged, was an abscess which caused the doctor great trouble, and even endangered his life. As a plaster to this wound he now asks the railway company to pay him $10,000, and has called upon the court to enforce his request. The case is full of fine points—fuller of them than the egg-crate. Did the company invite and request the physician to enter the baggage-car and sit down on the egg-crate? Is it the duty of the company to polish up the nails in the egg-crates which it carries? Should not the doctor have looked out for nails before he sat down? Was the sore really an abscess, or only an old-fashioned boil? Was the doctor's blood in good order when he sat down on the nail, or did he inflame it unnecessarily by getting mad and prancing around in warm weather, when he discovered that the nail had gone where

it ought not? Can a man's blood be in good order in the midst of a "heated" Presidential campaign, and when he is on his way to a big political meeting? Might not the doctor in his enthusiasm have taken that method of nailing his colors to the mast, and only became sorry for it when inflammation ensued? Altogether the case embraces many very interesting medico-legal questions, and will, no doubt, result in settling many points hitherto undecided. It is a case of which it may truly be said that there is a point in it.

NICE GIRLS AND GOOD WOMEN.—If what a writer in one of the English magazine says be true, the women of Paraguay must be worthy of our admiring interest.

Cleanliness is the rule in Paraguay, and it extends to everything—dwellings, furniture, clothes, and person—nor are the poorer classes in this respect a whit behind the richer. Above all, the white sacques and mantillas of the women and the lace-fringed shirts and drawers of the men are scrupulously clean; nor is any one article in greater demand, though fortunately with proportional supply throughout the country, than soap. Each house has behind it a garden, small or large as the case may be, in which flowers are sedulously cultivated; they are a decoration that a Paraguayan girl or woman is rarely without, and one that becomes the wearer well. Without pretensions to what is called, classical or ethnologically taken, Aryan beauty, the female type here is very rarely plain, generally pretty, often handsome, occasionally bewitching. Dark eyes, long wavy, dark hair, and a brunette complexion most prevail; but a blonde type with blue eyes and golden curls, indicative of Basque descent, is by no means rare. Hands and feet are, almost universally delicate and small; the general form, at least till frequent maternity has sacrificed beauty to usefulness, simply perfect. As to the dispositions that dwell in so excellent an outside they are worthy of it, and Shakespeare's "Is she kind as she is fair?" might here find unhesitating answer in the affirmation that follows, "Beauty dwells with kindness." A brighter, kinder, truer, more affectionate, more devotedly faithful girl than the Paraguayan exists nowhere. Alas, that the wretched experiences of but a few years since should have also proved, in bitter earnest, that no braver, no more enduring, no more self-sacrificing wife or mother than the Paraguayan is to be found either.

CLIMATE AND HYDROPHOBIA.—It has been stated by a San Francisco physician, Dr. L. N. Dorr, that no case of hydrophobia, in dog or man, has ever been known on the Pacific coast of America, North or South, although dogs are abundant. This extraordinary fact appears to be well established; at least it is impossible to find any record or history of the disease. He attributes the immunity to some peculiarity of climate, probably its electrical condition. He proposed to test the influence of the climate by sending some dogs from the East immediately after their being bitten by a rabid animal, and keeping them properly secured until the result is ascertained. A more practical plan would, be he suggests, to have a number of the many persons who are annually bitten by rabid dogs in the Eastern States and in Europe come to this coast, where the influence of the climate would be enhanced by the inspiration of hope. Even if the disease should come on under these circumstances, he thinks it might possibly be so modified as to render it susceptible of cure. This should be a matter of interest, now when so much attention is given to M. Pasteur's investigations. We hold that hydrophobia is a nerve disease, related chiefly to mental or psychological conditions, and naturally enough, change of scene and climate, as the California physician clearly intimates, would have no little influence.

NOTES IN SCIENCE AND INDUSTRY.

Salt Lake Rising.—ED. PHRENOLOGICAL JOURNAL:—I would correct and add a little to the article "Great Salt Lake as a Geological Index," published on page 353 of the December number of the JOURNAL. The statement that the Lake "is still falling," is a mistake, for it has been gradually rising for a number of years. During the summer when the rivers are used for irrigating purposes, the lake falls somewhat but during the winter it rises again. Salt Lake has seven islands, one of which is called Church Island, some twenty miles in length; so called from the Mormon church keeping stock there in years past. Twenty years ago this Island could be reached on horseback but now the intervening water is twenty feet deep. This shows a rise of about fifteen feet, but some dispute that it has raised so much. From the railroad leading from Ogden to Salt Lake can be seen fences running out into the lake. When these were built they were on dry land, but now they stand in the water.

The question is asked, "Why should the water have become briny?" I think the solution an easy task. At the southern extremity of Lake Bonneville, or a little beyond, are salt mountains where salt is now quarried like stone. This natural salt gradually dissolving found its way into Lake Bonneville. On the southern and western boundaries of Salt Lake are numerous saline fountains, the water of which is so briny that it is unfit for any use, except to manufacture salt. These fountains are very large and, no doubt, had their existence in the depths of Lake Bonneville. Thus, from two sources, were the waters of the ancient lake imbued with a certain portion of salt, which made its entrance at the southern end and its exit at the northern. When the lake began to fall on account of shrinkage in rain and increased evaporation it had no outlet and the salt remained as also did the supply of saline water. It will be remembered that no outlet has ever been found to Salt Lake, and its deepest part does not exceed fifty feet. If the rainfall should become as abundant here as in some states it would only be a question of time for the Salt Lake Valley, with all its cities, towns and villages, its fruitful fields and pleasant gardens, to fall below the rippling waves of a resurrected lake. But at the rate the waters are now rising it would be many generations before this could be accomplished. It would take many years to reach the Mormon metropolis, which is now about ten miles from the bank, with a considerable incline toward the lake.

As the lake rises the water becomes fresher. The marshes are divided from the lake by a levee and the salt water is let in by a head-gate. During the summer the water evaporates and leaves hundreds of tons of salt which is scooped into wagons and hauled to the railroad to be shipped. The salt obtained in this way is coarse, transparent and strong. Table salt is obtained by grinding this or by boiling the lake water. The salt is stronger than that imported, but is not considered so good for dairy purposes. It is claimed that different portions of the lake produce as many as nine kinds of salt. The water is very buoyant and during the summer season is delightful to bathers, and Salt Lake City sends out two or three bathing trains each day at that time of the year.

There is a legend among the Mormons, that when their pioneers came to Utah, in 1847, they found a very aged Indian in a small tribe, who told them that when he was a papoose, his parents travelled from one mountain to another in a canoe. It is further claimed that an early party of explorers mentioned a large fresh water lake in the Rocky mountains. If this can be substantiated, it would bring the shrinkage of Lake Bonneville down to a comparatively recent period. C. H. BLISS.

Coal not of Vegetable Formation.—Prof. Raker, a geologist of North Carolina, writes in relation to Hon. Andrew Roy's criticism of Prof. Orton's theory of the origin of coal: "The letter written by Andrew Roy to the *Ironton Register*, has been noticed in the *Mining Review*, criticising Prof. Orton on the geological coal formation of Ohio, and has been read with much interest. The long established theory that coal has been formed from wood or vegetable matter is all bosh. No one who has been a close observer and has had practical experience in the mining of coal would give the idea any attention. Coal as well as all other minerals has been formed and is still forming by and through a chemical process, by a combination of gases and materials prepared by nature for the purpose.

"No one will attempt to deny that minerals are held in solution in water; take for instance lime water, it will form limestone. Copper has been gathered in its native state from water. Sulphur can and is often gathered from water in large quantities, thus proving this fact. Coal is, as a general thing, found in certain basins, sometimes lying very deep under immense strata of rocks in regular formations, with no signs of any upheaval or volcanic action, making it impossible for wood or vegetation of any kind to be found at the bottom of these basins. Do you admit that rocks are forming? If so, then this will settle the question. Can not coal be produced with the aid of the gas, the sulphur and other combinations? Certainly they can and do form. Often shapes of animals and stumps of trees have been found in coal mines formed in coal. If chemical activity has the power to form coal from rock, it can and will form wood or any other material that it comes in contact with not conflicting in its nature. Take some of the finer minerals, copper ore for example. In these ores there are very often found gold, silver, copper, lead, quite a combination. Why? Just because the chemicals that form the minerals contain the properties necessary to form those minerals. Having had many years of practical experience, as well as study of geology, I must give it as my candid opinion that Mr. Roy is right, and the time is not far distant when practical men will take the place of men who only make their theory from what some one has written many years ago."

Profit in Timber Growing. — A writer says in Vick's Magazine on this subject:

In a former article I spoke of the profit of timber growing, and gave some figures which I could vouch for, to show that in many localities the planting of timber is likely to prove one of the safest and most profitable investments that the farmer can make. The past season has furnished strong proof of another advantage of timber belts, which is of sufficient importance to have a large influence in inducing farmers to plant timber. I refer to the protection which timber affords to winter grain, grasses and stock.

It is known to all readers of agricultural papers that through a large breadth of our best farming lands more grain was winter-killed during the past winter than was ever known in a single season before. My own County of Butler, Ohio, suffered as much, perhaps, as any, more than half the winter grain being totally killed. As crop reporter for the Department at Washington, I paid close attention to the condition of grain, and I found that invariably when I found a field that promised a profitable yield, it was due to the protection of timber. Even a tall hedge along the side of a field saved a wide belt, and when a field could be found with timber on the west and north it was but little injured, even though extending sixty or eighty rods. Early seeding and fine condition the previous autumn, liberal manuring and the most thorough preparation of seed bed, all counted for nothing; but wherever a timber belt was found bordering a field, there was a good crop. This confirms a statement made by Professor Townshend, in a lecture before the agricultural class at the State University, that "on the prairie lands of the west it had been found that with one-sixth of the land planted in timber, the remaining five-sixths produced as much grain as the entire amount without the protection of the timber."

The Conversion of Refuse Matter to use.—A contributor to the *Providence Journal* tells some interesting truths and some apparently fanciful things about how waste products are worked up in the following: "Now-a-days there is as much truth as wit in the old saying that dirt is only matter out of place. In a recent publication entitled 'The World's Lumber Room,' Selina Gage amplifies and illustrates the ancient saw, showing that nothing is or need be absolutely lost. The slag from our great furnaces, once a positive obstruction and burden, is now used for concrete walls, railway ballast, foundation stones and the finest spun glass. Coal tar which was a similar dead weight on the hands of the gas makers, is made to yield up its rich stores of carbolic acid, naphthaline, benzole and paraffine, from which are obtained the most delicate scents of perfumery; and more valuable still are the rich aniline dyes it contains, now used in producing the most brilliant colors of our woolen and silk goods. Sawdust produces sugar, a regular article of manufacture in Norway, and the sugar is turned into brandy; oxalic acid, charcoal and potash come from the same source. Cotton seed, heretofore thrown away, is used to fatten cattle in this country and in

England. Nature's largest lumber room is, however, required for her dust. Were the atmosphere free from it we would have no reflected light, and our days would be passed beneath a sky of inky blackness, and in an atmosphere which would give back but a dull glimmer without glitter or color. More than this, without dust we should probably have no fog, no clouds and no rain. This is the utilization of dust which nature makes, but man has never followed or approached the example. Dust carries its clouds of disease-breeding matter all over the world; we breathe and live in an atmosphere of carpet-sweepings, emanations from the human skin, coal dust from the stove, iron filings, pollen, wood and leaf fibers, grindings of stone, siftings of earth and vegetable mold, etc. And, as if we did not kick up enough dust of our own, Arctic observations of meteoric dust show that more than five hundred million tons of impalpable powder fall uniformly and steadily over the whole earth annually."

A Meeting of Microscope Makers.—At the recent meeting of the Biological and Microscopical Section of the Academy of Sciences, Philadelphia, there were displayed in all one hundred and twenty-one microscopes, representing the following makers: Zentmayer, Beck, Queen & Co., Cheyney, Crouch, Gundlach and Zeiss. According to the report given in our Exchange the objects shown were both instructive and beautiful, representing professional and amateur work, much of the latter being worthy of commendation. Among the many mineralogical specimens exhibited were native crystals in mica, with polarized light, crystals of cuprite, arsenious acid, aragonite, cinnabar, gold and iron, the latter showing the graphite plates, which by their relative proportions given in our Exchange constitute the difference between cast-iron, wrought-iron and steel. The botanical preparations were designed to show the histological structure of the higher plants and the peculiarities of the lower, the fructification in the phanerogams and its different phases and variations in the cryptogams. The reproduction of mosses under varying conditions formed an exceedingly instructive group of objects. The myxomycetes, one of the groups of this order, were well represented, as their beauty makes them highly attractive objects. Many handsome diatoms were shown; an unusual preparation was one showing sections of these minute and delicate objects. A microscope showing cyclosis or circulation in the living plant-cell was highly appreciated.

In the department of zoology many educational objects were exhibited, showing the anatomy of insects, the general structure and visual organs of mollusks, frog's blood double stained, a fine specimen of the chick-embryo on the second day of incubation, living crustacea, and the circulation of the blood in a living salamander.

The Nature of Flame.—According to Dr. Siemens, large furnaces, on account of the nature of flame, must replace small ones. He claims to have proven that solid substances interfere with the formation of flame, and that flame injures solid substances with which it comes in contact. To accounnt for the phenomena he advances, preferably, an electric hypothesis. Accordingly, he explains flame as the result of an infinite number of exceedingly minute electrical flashes, the flashes being due to the very swift motion of gaseous particles; and a solid body which opposes itself to these flashes is cut by them, while the motion being more or less arrested by the solid body, the flame is thus more or less subdued. Siemens insists, therefore, that flame must not be allowed to impinge on bodies to be heated, but must simply heat the bodies by radiation, and furnaces must be so constructed as to allow the flame to develop out of contact, not only with the substance on its bed but with the walls and roof of the furnace itself.

Monument to a Workwoman.—Recently a monument has been erected in Annaberg, Saxony, to the memory of Frau Barbara Uttman, in recognition of the great service rendered to the working women of Saxony more than three hundred years ago, when great distress was prevailing on account of lack of work. Barbara Uttman made a journey to Brussels and learned lace-making, making a speciality of point-lace; then returning to Annaberg she instructed her fellow-workwomen in this art, and so relieved a great deal of suffering. The monument is a drinking fountain surmounted by a statue of Mrs. Uttman in the German dress of the middle of the sixteenth century. This is about the first public recognition of woman's worth that has been made in Germany.

FOWLER & WELLS COMPANY., *Publishers.*
H. S. DRAYTON, A.M., M.D., *Editor.*

NEW YORK,
FEBRUARY, 1886.

THE WANT OF MORAL TRAINING AND CRIMINALITY.

IN the years past we have penned editorial items in which ground was taken against the common view that education, as our common schools generally supply it, is the grand remedy for vice and crime of high and low degrees. We pointed to the chief actors in cases of official dishonesty, in the frequent robberies large and small in the walks of commercial life, and in the irregularities of the social circle, and showed that they as a class belonged to the educated. We cited the rolls of prisons and penitentiaries in our older states, to show that the great majority of their inmates could read and write, and a large proportion had attended the public schools two years or more. Our motive in writing at such times was to show the great necessity for moral training as well as intellectual to the young of our population; and that the integrity of our national institutions, and the solid development of our people, was dependent as much upon moral training as upon intellectual.

Now we would add a statistical item or two to the statistics given afore-time and then consider another point that the matter involves. In one of the Pennsylvania penitentiaries there was recently said to be 1014 inmates. In another prison of that state 1605; in still another 2383 convicts. Nearly all of these could read and write. Of 1368 persons confined in the State prison at Auburn, N. Y., 1182 were said to have more or less education. But we are told in this connection that of the 1014 only 7 were mechanics; of the 1605, 1219 had no practical knowledge of any trade; of the 2383, 1950 were in the same pursuitless condition. In the Auburn prison fully as large a percentage of the tradeless were found. And later, of 2184 persons arrested in Chicago 1438 had no definite occupation.

Here we get at one grand reason for the idleness, vacillation and shiftlessness that prevail in our large towns and cities. Want of purpose, fixedness of attention to some settled employment in a young man—or woman—tends to laxity of nervous fibre and instability of intellectual action. There appears very soon, in such a case, a weakness of will, a loss of individuality, and the youth becomes the subject of his environment, the pliant tool of circumstances. Moral training is the most efficient aid to motive—just as it supplies reasons for useful activity in one's immediate sphere—reasons flowing out of personal reponsibility, as a brother, father, husband, friend, citizen, *man*—so it indicates opportunities occurring directly in one's sphere for the employment of time and talent; and this contributes to peace and satisfaction of mind.

It matters not how far the cultivation

of the intellectual faculties is carried, if the morals are neglected there will be evidence of irregularity, unbalance, excess. There are many brilliant *cranks* among us, men and women, who elicit our admiration at one moment and our contempt at another. They are one-sided, unsteady, because lacking in moral development. Would that the world could recognize the necessity of moral culture to mental poise. Washington, Jefferson, Webster, Seward, Lincoln avowed the need of religious sentiment to render our nation substantially prosperous, permanently great. They saw in the feeble morality of the people the decline of the State. So we see in the abounding extravagance and frivolity of metropolitan life a falling away from the sober mental poise that is consistent with moral strength—and that our cities supply the bulk of criminals that crowd the state prisons is not strange.

"Humble toil and heaven-ward duty, these will form the perfect man," writes Mrs. Hale—and she is right. "Morality when vigorously alive," Mr. Froule says, "sees farther than intellect, and provides unconsciously for intellectual difficulties." We must do more for the youth of the land who are crowding into the arena of life from the common schools. We must provide them some security against the temptations and excitements that thickly abound at the very threshold. So long as their characters are permitted to form irregularly, haphazardly, without the discipline and checks of moral sentiment rendered active and influential by training, we must expect the majority to be saddened, or sobered, dismayed or broken down by disappointments, and worse than that we must expect many to yield to the incitements of vice, and plunge madly into the whirlpool that leads to crime and destruction.

MORE SMALL CRITICISM.

"IN Germany Gall and Spurzheim were among the best abused of men. In England, Jeffrey—who would with equal light-heartedness have written a criticism upon an operation for cataract, or the manœuvres of the Channel Fleet—attacked them fiercely through the *Edinburgh Review*. And his popular and caustic pen largely, no doubt, contributed to the lowness of the place their labors held in public estimation. The scientific world seems to have been less exercised and antagonistic than might have been expected. And it was not till ten years after Jeffrey's article, and more than five-and-twenty years after the promulgation of the Opus Magnum of Phrenology, that any very serious assault upon it was made from the strictly scientific side. This, strangely enough, was organized not in the camp of the professed anatomists or physiologists, but in that of the metaphysicians. Well supplied with the results of physicial investigation, Sir William Hamilton advanced to his opponents' position, and fairly carried it by storm. Starting with the philosophical assumption that the question at issue was an open one only to be decided by the logic of facts, he first discusses the theory of Gall and Spurzheim regarding the functions of the lower and back part of the brain, known as the cerebellum; and categorically refutes the several assumed reasons for this theory—one that here can only be alluded to in passing."

This paragraph is taken from an article that was published last year in the London *Graphic* and which abounds in other statements quite equal to it in one-sidedness, and, shall we say ignorance? It seems to us almost incredible that a

man of so much *literary* cultivation as this writer appears to be, should be so wanting in candor. We can understand and excuse ones ignorance of a subject, especially a subject requiring technical training, but straight-out utterances, that are replete with prejudice and evident ignorance while their phraseology denotes literary training, merit emphatic censure.

This new critic of Phrenology, who disposes of its claims in so prompt a fashion, has evidently obtained his little information of the Jeffrey and Hamilton controversies at second hand, and that of a purely *ex parte* character, on the Jeffrey and Hamilton sides. We would kindly advise him, and all who partake his opinions, to read Mr. Jeffrey's own words as they appeared in his more brilliant than sound, *Review* article, and then to read with equal care Mr. Combe's answer as it appeared in the Edinburgh *Phrenological Journal*, Vol. IV., 1827. The trenchant and yet honorable manner in which Mr. Combe exposes the fallacies and absurdities of Mr. Jeffrey's reasoning and physiology must win even the respect of the *Graphic* writer.

As for Sir William Hamilton's tremendous achievement in having "fairly carried it by storm," the *Graphic* writer must surely be ignorant enough of latter-day physiology, assuming that he knows the postulates of the Scottish philosopher concerning Phrenology, else he could not make so extravagant a statement in a weekly with a large circulation. Let him read the correspondence in the *Scotsman* and *Caledonian* newspapers of Edinburgh, the report of the umpires to whom the questions at issue were referred by both sides, and then let him consult modern authorities on the physiology of the brain and skull, and if he possess but a minor degree of the judicial quality, and does not acknowledge that the field was fairly won by the phrenologists we will resign our place to a less scrupulous admirer of the great man who laid the foundation for educational reform in the schools of his country.

ENTHUSIASM IN PHRENOLOGICAL STUDY.

WE think that phrenologists are as subject to the charge of enthusiasm as any other class of thinkers, for it seems a special trait of theirs to declare their belief at every opportunity. One who has been known by his friends for reticence and reserve no sooner becomes a convert to the truth and gospel of Phrenology than he discovers a new activity, a disposition to impart what he has learned to others, and his old acquaintances in their surprise may be rather free in the use of the terms "cranky," "off his balance," "crack-brain," while they are not able to deny or refute his statements. In the benign law of morals, truth and duty are inseparable. When a man has cordially accepted a moral principle that has a close relation to human conduct, he feels impelled to illustrate it in his life and declare it in his talk. He finds the highest form of enjoyment in practically showing forth his earnest convictions. The lives of all teachers of moral, religious and scientific truth are a demonstration of this great fact in the mental economy of man. We have known men and women who had been engaged in benevolent missionary work as an occupation, and who came to the study of Phrenol-

ogy with doubts and misgivings, when they had learned of its true nature blossom into such earnestness and zeal as they had never exhibited before, and for the reason, as they most warmly expressed, that they saw as they never had seen before the way in which to labor with success. They now understood themselves and human nature and could apply their experience, abilities and influence to far bettter advantage.

The enthusiasm of some students of Phrenology is amusing to us, while at the same time we rejoice at it. To be sure, false steps may be taken by the enthusiast, some indiscretions may be committed through lack of experience, but the spirit of truth is seen working in the man or woman—the desire to help others born of the help they have recognized in themselves, prompts to high exercise every faculty of their nature. They would let their light shine—be seen of men—and the ultimate effect is good.

DEATH OF NAHUM CAPEN, L. L. D.

IT is with deep regret that we have learned of the death of Dr. Capen, one of Boston's oldest and most esteemed citizens. He had evinced an earnest regard for the cause of Phrenology—from the time of Dr. Spurzheim's visit in 1832, when he became what he was ever afterward proud to be considered, the personal friend of that great man. He had been sick but about two weeks previous to his death, having contracted a severe cold. Dr. Capen was born in Canton, Mass., April 1, 1804, and after receiving his education in the public schools of his native place came to Boston, and at the age of 21 years went into the publishing business as a member of the firm of Marsh, Capen & Lyon. He continued in this business a long period, with several changes in the style of the firm. Possessed of literary tastes, he was an author as well as a publisher, and during his whole lifetime kept his pen employed. He was a frequent contributor, anonymously and over his signature, to newspapers and magazines, and was engaged in the last portion of his life in the completion of a "History of Democracy," a work projected years ago, and intended at first to comprise three volumes, but which is to include four. One volume has already been published, two more are completed and the fourth is so far completed, that the work will be readily brought to a conclusion by others. Mr. Capen wrote a "Biography of Dr. Gall," and edited his works translated from the French; prepared the "Biography of Dr. J. G. Spurzheim," prefixed to that scholar's work on Physiognomy; and was the author of other works on history, political economy, etc. He edited the Massachusetts State Record from 1847 to 1851, was the principal editor of the "Annals of Phrenology," and also edited the writings of Hon. Levi Woodbury, L. L. D. He was among the first to memorialize Congress on the subject of international copyright, and a letter of his, published by the United States Senate, led to the organization of the Census Board at Washington. Mr. Capen was appointed as Postmaster of Boston by President Buchanan in 1857, and held the office until 1861. During his term he was an earnest advocate of the free delivery system, and through his urgency the custom of collecting letters from the street boxes was introduced. As in

his early so in his later life Dr. Capen was a student and observer and active worker, having in view the doing of such things as would be useful to society. One of his last literary productions was the interesting semi-autobiographical volume "Reminiscences of Spurzheim, Combe and others." The editor, as well as the publishers of this magazine, will ever remember Dr. Capen's beautiful face and dignified form that were wont now and then to be seen in our office. We would that such men might be immortal —they glorify humanity.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST," ONLY WILL *be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

TO OUR CONTRIBUTORS. *It will greatly aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a small hand, or in pencil, as the compositor has to read it across the case, a distance of over two feet, and the editor often wishes to make changes or additions.*

4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*

5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*

6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNAVAILABLE *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal and private matters addressed to the Editor will receive his early attention if this is done.*

THAT AND AS.—*Question*:—Please tell in the next JOURNAL which is proper, "I do not know *that* we shall do so," or, "I do not know *as* we shall do so.—H. S. J.

Answer.—We prefer the use of "that" in such a connection, the particle "as" generally expresses comparison or manner or the condition or quality in speech; it is very frequently used, we know, as in the sentence you have given, but when we come to consider exactness of language we think that it is an irregularity.

FRUIT EATING.—A. K. W.—Hygienic authorities differ somewhat with regard to the time for eating fruit. We are of opinion that fruit should form a part of the regular meal. Some are in favor of fruit-eating half an hour or more before breakfast, claiming its effect is excellent in strengthening the tone of the stomach, preparing it for its work. This for the most part is true if the fruit is eaten in moderation.

CHANGING EYES.—W. J. M.—The eyes of some persons do change in hue. Emotion often has the effect of deepening color. Some tones of blue in the iris are changeable; so too brown eyes may exhibit transitions.

STUDY OF TELEGRAPHY.—J. B.—There are several schools in New York, and in other large cities, where one can learn how to operate telegraph machines. We think that girls are well adapted to the work. The wages paid to competent operators are from fifty dollars up. Of course this is an occupation which has a tendency now-a-days to be crowded, so that one may be compelled to wait some time for a place after having learned to tap the key.

CHANGE OF OCCUPATION.—J. H. C.—You profess a strong inclination to literature, and at the same time show that you are greatly wanting in continuity. It is very important that you should possess power of attention and concentration of faculty if you expect to be successful in one of the most difficult of pursuits. You may, however, school yourself in the matter of application. It is quite probable that your habits heretofore have tended to render you vacillating and irregular, mentally. We at any rate would not advise you to give up your present employment altogether; it supplies a means of livelihood at least. Use what leisure you can obtain for study in the direction of your leaning, and after a time you may be able to secure a clerkship which will be a definite step toward what you prefer.

A PERSIAN CUSTOM.—Our Calcutta correspondent Mr. Doss, mentions in a recent letter that it is an established custom with the people of Persia on the birth of their children to have mid-wives mould the baby's head, and that they do so with great dexterity. This custom has not been the sole property of the Persians, for other Asiatic peoples have been known to do the same; but it ought to be understood that unless constant pressure is made with apparatus the moulding process of a mid-wife's hands on a new born infant's head will have but little effect as nature in subsequent development of the child's brain tends to assert itself, and to indicate the social and family type in form.

MIND READING.—O. J. S.—We infer from your question that you mean the experiments that are made now-a-days in private and in public by so called mind-readers, the experimenter, who finds hidden articles or actually expresses the thought that another has in mind, obtaining his clue through the involuntary muscular action of the person who has hidden the article, or knows where it is, and is thinking on the subject which the mind-reader has to discover. The reports of the proceedings of the Society for Psychical Research in London contain a good many experiments of this kind; also a recent book "Mind and Beyond" founded upon those reports, has been published in Boston. We do not know any text books on Clairvoyance.

HAND-WRITING AGAIN.—L. G.—We think that by carefully reading the articles on "Indications of Character in Handwriting" which are now being published in the PHRENOLOGICAL you will obtain a sufficient knowledge of the author's method to make an application of it in your own case. We are of opinion that the principles he has set forth cover the field of character in hand-writing, and about all there is known of the subject is described in practical and logical terms.

FILTERS.—A. P.—The apparatus you name has a good reputation; it is a combination made in accordance with the common principles of filtration. We also hear good reports of the "stone" filter, but this is somewhat more expensive than the charcoal combination.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects being preferred.

Electro-Psychology in Practice.

EDITOR OF PHRENOLOGICAL JOURNAL.

Dear Sir:—In the late September number of your monthly I saw some remarks on "occult power," by Mr. J. McLeod, and up to date have seen no reply to his query for an explanation, why one person can influence or impress another when not mesmerized. Psychology teaches that there are many persons who are continuously in the electro-psychological state, and these can be impressed by a person who is positive electrically. Yet, the subject is perfectly conscious and remembers all that occurs and is fully awake, just the opposite of the subject mesmerized, who is unconscious of what occurs while in the mesmeric condition, and remembers nothing of it.

Mankind are either positive or negative electrically, or in the state of equilibrium, and moreover the right side of the body is positive and the left side negative electrically. Good health is being in a normal condition. A sound mind must be in a sound body. Disease is to be in an abnormal condition in a non-equilibrate state as regards body and *mind*. While I am in good health and live correctly I am positive to disease and can cure many nervous types without mesmerism, medicine or rubbing. My mind then, is positive, and it acts upon the mind and body of the diseased person. Some nineteen

years since (while at school) I found that I possessed the power to control negative persons at will, without contact. Since that time I have been a close student of metaphysics and electro-psychology and now find that I can usually influence a sick person, for he is negative to me. The soul—the mind—can not be explained by the sciences of chemistry or physics, but can be somewhat perceived through the science of electro-psychology.

All health is really in the mind—soul. Disease and pain are not in the body *per se*. A dead man weighs just the same to a grain as he did when alive, and yet the body has no feeling, no pain. Where then is the pain of the disease? I answer in the *mind*, and disease is only known by the *mind*, through the nervous system. There is an eye of the mind; there is a spiritual eye, there is an inward voice and guide which silently impresses man when and how to act, and also when to not attempt to cure impossible diseases. Yes, there is an interior principle which man should follow. It's the soul of our soul—the life of our life, coming direct from God through the electrical law, for we are the children of the Most High, and the highest manifestations of God in the Universe. This is a sublime truth which gives us dignity and power. In the soul reside all the active vital powers that man possesses. To live truly, means to think and act truly. It is the Spirit that maketh alive and imparts to us the Divine energy of cure.

No sane man will say that Jesus practiced deception in performing his wonderful cure by putting clay upon the eyes of the blind, or in raising Lazarus from his sleep. The same law of cure which he used 1850 years ago exists to-day. Did he not say to the twelve and the future world, "Ye shall do greater things than these?" For Jesus to have attempted in that age to explain the Divine law of cure, would have been talking to stones, for the "fulness of time" had not come. To be well, men should live correctly and make it a business to breathe deeply and fast, especially just before exposure to contagion. This will surcharge mind and body with the positive principles of prevention. To treat or control an insane person place the left hand or finger upon the organs of Individuality and Eventuality, and the right upon the 5th or 10th cranial nerve, and request him to breathe deeply, at the same time impress him and guide his mind to think upon other things than the one upon which his mind is disturbed, and then induce him to take a nap and tell him you will awake him at — o'clock, and he will usually agree to sleep. Then use all your power to restore his reason, and if he has not been too long insane there is hope for his recovery.

To treat shaking palsy, place the left hand upon the forehead and the right upon the nerves of sensation, and will and request the person to remain quiet, and treat him often at first as the symptoms seem to require.

To treat paralysis, when motion or feeling is gone completely, try to induce action by placing the left hand or thumb upon the organ of Individuality and the right upon the median nerve, and direct the hand to move at will. A few trials will usually cause it to do as you desire.

To induce feeling, place the right hand fingers upon the nerves of sensation, as aforesaid, and the left upon the pneumogastric nerve and ask the patient to breathe deeply and fast, and soon a tingling, creeping feeling will be perceived; persevere in this treatment of motion and feeling.

To treat seasickness, place the right hand upon the pneumogastric nerve and the left upon the nerve of sensation, and ask the subject to breathe deeply, at the same time divert his mind by encouraging conversation, and in five minutes relief will be the result. I have never failed to cure it whether on salt or fresh water.

LESTER A. HULSE.

Biometry Not A New Discovery.

EDITOR JOURNAL.

In the December number of your very instructive magazine, I find a paper signed, T. S. L. M. D., which invited my attention, and held it until I had carefully read it. The title of this paper is "Biometry" and the writer seems disposed to regard as new a method of ascertaining the comparative longevity of people by measurements of the head, an idea that is known to most professional phrenologists. About 1854, Prof. Powell, of Cincinnati, Ohio, announced to the world that he had discovered the fact and verified it, that the base of the brain is devoted to the sustenance of life, and that by a measurement, which he gave, the probabilities of early death, or long life of any person could be determined, with a degree of accuracy which would prove of great

service to the physician, and Life Insurance Companies.

In 1856-7, I atttended a special course of lectures by Prof. Powell, delivered in the Clinic hall of the "Eclectic Medical Institute" Cincinnati, on the general subject of Cerebral Physiology. During this course he dwelt at length upon his new discovery of the "Life Line" as he called it, demonstrating his theory, by measurements of skulls, and of living heads before the class. The formula for the measurement, as given by Prof. Powell, is this. "Draw a line from the external orbit of the *os frontis*, to the center of the spinal protuberance of the *os occipitis*, then measure from the *meatus auditorius externus* up to this line." This measurement gives the depth of that portion of the brain devoted specifically to sustaining, and conserving life. The average is about ¾ of an inch, the minimum in adults ½ inch, and the maximum, so far as he had observed, 1¼ inches. With half an inch only, one has very slight hold on life, and is not likely to reach the age of forty years. Three-fourths of an inch, gives a probability of sixty to seventy years; an inch eighty to ninety years, and an inch and a quarter, one hundred to one hundred and ten years or more.

For almost thirty years, I have relied chiefly upon this measurement, as a basis of *prognosis*, in chronic diseases especially.

WASHINGTON, D. C. T. A. BLAND, M. D.

Thanks.—"We have received your beautiful Phrenological Chart and hung it upon the wall; also the JOURNAL is received. We indeed thank you for placing us upon your list. We thank you in the name of the people who derive benefit therefrom. Librarian, L. I. Free Library, Brooklyn, N. Y."

PERSONAL.

MARY H. HEALD, M. D., wife of Dr. Pusey Heald, associated with him for many years in the management of Heald's Hygeian Home, at Wilmington, Del., died Dec. 31, last after a prolonged illness. The deceased was formerly a Miss Homer, and prior to practicing her profession in this city was physician to a Hygeian Institution at Dansville, N. Y. In 1871, with her husband, she established a Home in Wilmington.

Her career has been conspicuously successful. At the Home she has treated hundreds of patients affected with all sorts of maladies. The arduous duties which she imposed upon herself, at length, overtaxed her strength and for the past two years her health has been very poor. She was a lady of very genial disposition, winning all who became acquainted with her.

M. FRANÇOIS JULES P. GRÉVY was re-elected President of the French Republic at Versailles on December 28th, on the joint vote of the Senate and Chamber of Deputies acting as a national assembly. M. Grévy's total majority on the joint ballot was 135. Although his late administration has not been characterized by any marked personal vigor or eminent ability, the French people appear to be satisfied with him to try him six years more.

"KING LEOPOLD," of Belgium is said to be six feet four in height, well proportioned, with a high forehead, very open, pleasant countenance, social and communicative, speaking the English language well, and having a high appreciation of America and Americans.

On November 26th, the memory of SIR WILLIAM SIEMENS, the inventor and scientist, was honored by the unveiling of a memorial window in Westminster Abbey. Although not a son of England by birth, Siemen's illustrious career was begun and finished on her soil, and it is but fitting that the great repository of her heroes and geniuses should hold a mark to his memory.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

People that have nothing to do soon become tired of their own company.

—If there is any person to whom you feel a dislike, that is the person of whom you ought never to speak.—*Cecil.*

There is no man so great as not to have some littleness even more predominant than his best greatness.

Conceit is to nature what paint is to beauty; it is not only needless, but impairs what it would improve.

We have seen a thousand people esteemed, either for the merit they had not yet attained, or for what they no longer possessed. *Sr. Evremond.*

A man may be "rising" in business, in wealth, in his profession, socially, intellect-

ually, even ecclesiastically, and really not be rising at all.

Let us remember those that want necessaries, as we ourselves should have desired to be remembered had it been our sad lot to subsist on other men's charity.—*Atterbury.*

MIRTH.

"A little nonsense now and then,
Is relished by the wisest men."

What English author has the longest name? —Smiles. Why?—Because there is a mile between the first and last letter in his name.

One of the first lessons that ought to be taught at the fashionable cooking school is: "Never stir the hash with one hand and smooth the hair with the other."

Deaf old gentleman: "The conversation seems very amusing, my dear. What is it all about?" *Hostess* (fortisimo): "When they say anything worth repeating, Grandpa, I'll tell you."

"You can not taste in the dark," said a lecturer. "Nature has intended us to see our food." "Then," inquired a forward pupil, "how about a blind man at dinner?" "Nature, sir," answered the professor, "has provided him with eye-teeth."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor the Editor with recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

ROSE BUDS; By Virginia Gerson; large octavo; pp. 64. Price, $2. White, Stokes & Allen, New York.

A charming holiday book for the little people. So attractive—in fact—that older members of the family circle into which it comes will find excuses for looking over little shoulders and studying the odd illustrations. The text is of the simplest character well adapted to little minds, and the pictures explain themselves. Pages 24 and 25 are worth the price of the book to one gifted with Mirthfulness. Honor is really due to those who weave into the web of life, such pretty, restful, artistic "nonsense" as is presented in "Rosebuds," from the wreath on the first cover page to the little rosy witch who is evidently riding away to "a castle in the air," on the rose-laden twig that adorns the back of the cover.

THE INFANT PHILOSOPHER: Stray Leaves from a Baby's Journal. By T. S. Verdi, M. D., Parchment paper, 30 cents; cloth, 50 cents. Fords, Howard & Hurlbert, New York.

This bright little journal begins where all systematic histories should begin, at the very beginning of the author's experience. The baby narrates his first glimpse of life and the world; and the manner in which he slowly distinguishes impressions, sights and sounds, and applies them to himself, is pictured with great cleverness. As the journal proceeds the "Infant Philosopher" tells of his encounters with the tribulations and ailments of infancy, and philosophizes over the treatment and the remedies. In this connection Dr. Verdi has not neglected to throw a good deal of light upon the grave mistakes of careless nurses and short-sighted mothers. The policy of silencing the child's pain by any convenient nostrum, without for a moment considering the after-effect upon the child's system, is condemned, as it should be, with force. Incompetent and reckless nurses come in for a liberal share of the young philosopher's naive invective; mothers who treat babies as though they were senseless machines of mere flesh and blood are sharply looked at more than once; and there is one chapter which describes, with most amusing simplicity, the confusion caused by the numerous foolish nicknames for familiar objects first taught to the baby.

Written in a humorous vein the little book interests us in the outset, and we find ourselves laughing at the unfortunate situations of Baby, while at the same time we can not but see the sarcasm of the writer, as he hits off the mistakes and follies of people in the management of young infants. He administers some hard slaps at the way even doctors treat babies at times. If the author were not a physician and an experienced one in the very line of his writing, we should call him over cynical. Yet we think it would not hurt mothers to read the book.

AN IRON CROWN. A Tale of the Great Republic. 8 vo., pp. 560. Cloth, price $1.50. Chicago: T. S. Denison.

A strong story in its way illustrating methods in business and politics, especially the latter, that are common enough in our metropolitan centres, and smiled upon or abetted powerfully by the wealthiest. The talent shown by the writer is more vigorous than deft and skilful, reminding the reader of the style of the enterprising newspaper reporter whose half-column items touching incidents in high and low life often form the variest reading for the public eye. The description of the saloon keeper, who is a "whipper in" for his party, or rather the thirsty office-seeker who hires him, is certainly of this reportorial type and a striking bit of writing.

The characters are generally drawn with strength. Tom Norwell is a specimen of the whole-souled fellow who allows himself, through want of courage to say no, to be drawn into a most dangerous position—a sad and tragic one. His best lady friend, May Price, is a sweet piece of womanhood. Horace Roker is a thorough villain, but far from the conventional villain who abounds in mystery and dark plots. The Malley twins are certainly an original production of literature. Their oddities can not fail to keep the reader amused. Fred Snicker is a dude of the well-known type.

The aim of the author is to show in colors anything but bright and winning the spirit of ambitious monopolists and money-grabbers, while a rather interesting love passage is woven into the drift of incident.

MANUAL OF CO-OPERATION; A Practical little volume; pp. 78, price 30 cents; paper covers, 10 cents. J. B. Alden, New York.

Mr. George Jacob Holyoake, Rev. R. Heber Newton, D. D. and the American Sociologic Society have co-operated to produce a manual for all who are interested, practically or theoretically, in solving the greatest of all social and economic problems—the true relations between labor and capital, the bettering of the condition of the industrious and deserving—and this is the result. The statistics it contains are interesting as showing the growth of opinion favorable to "co-operation" in the best sense of the word.

Like all innovations co-operation has been misunderstood and misapplied; the crude ideas have been used for the aggrandizement of schemes, and as a natural result there has arisen a very strong prejudice in the general mind against all plans of co-operation. Rushing headlong into schemes, of which the reasons for and against are not fully worked out, is one of the *vices* of the present age; and many of the most eager advocates of co-operation have in reality made but a very superficial examination of the subject. With admirable fairness—the successes and failures of various societies are here recorded.

MIZPAH, or Drifting Away. By Mrs. M. McCullen Whiteside, 16 mo., pp. 142. A. R. Fleming & Co., St. Louis, Mo.

Mrs. Whiteside is better known to the reading public of the southwest by her *nom de plume* "Muriel." Mizpah is not devoid of merit but bears the marks of hasty work. There are some improbabilities in the story notably that a woman wholly unacquainted with stage life should take the place of a "Star," and retain it with continued success. Full-fledged tragediennes fresh from the ranks of the uninitiated are quite as rare as the literary "mythical prodigies," who "toil not neither do they spin," while editors go daft about them and bid up their wares with reckless disregard of the painstaking authors who have genuine articles for sale. There is evidence of pleased perusal of Hugh Conway's stories—in the ejaculations. It is a temperance story of marked type, and with decided leaning to the Roman Catholic faith, to which, however, we will not object.

COMMON SENSE IN THE POULTRY-YARD. J. P. Haig, 12 mo., pp. 192, Industrial Publishing Co., New York.

The writing of this book was a kindly act in the interests of many who are perplexed as to the best methods for increasing a limited income. The perusal of these pages should enable the careful poultry man to avoid many needless expenses and disheartening failures. The adoption of Mr. Haig's "economical dodges," as he facetiously calls them will prove advantageous. It is a pleasure to recommend books of this class; their simple, straight-forward common-sense instructions are taking. In brief, it is a record of the failures, successes and experiments of an ingenious, persevering man, in a pursuit that the average man or woman can follow.

COMPLETE PRONOUNCING MEDICAL DICTIONARY with Appendix explaining Latin terms and phrases, etc. Price $5.

PUBLICATIONS RECEIVED.

THE KANSAS CITY (Mo.) REVIEW.—Recent numbers show marks of progress in this independent and useful organ of western scientific research. The change of type and distribution of subjects are improvements.

OUR LITTLE MEN AND WOMEN.—January number is as appropriate as ever in type, subject and illustration for little people. D. Lothrop & Co., Boston.

THE HOMILETIC REVIEW (New York), January, is of respectable thickness, and considers some practical questions in a symposic fashion, viz:—Modern Biblical criticism, and the "new theology" that modern criticism has made a necessity. The different departments supply a variety of aids to the average minister.

THE GRAPHIC, of Cincinnati, is improving in its quality of literature and illustrations. Our Eastern illustrated weeklies have a powerful rival in this bright and original publication.

THE MANUFACTURER AND BUILDER (New York), comes as usual with its large pages filled with current matter, relating to the subjects within its spheres.

NINETEENTH ANNUAL REPORT of the Home for Incurables, in New York City. A very full showing of a year's work in an excellent charity.

THE PHRENOLOGICAL MAGAZINE (London), has become well established, and is evidently growing in the esteem of English people. Each number contains a list of subjects that are reasonable and attractive. L. N. Fowler, Publisher; Alfred T. Story, Editor.

THE FORTNIGHTLY REVIEW (Authorized Edition); THE CONTEMPORARY REVIEW (Authorized Edition). These well-known English periodicals are re-produced by the Leonard Scott Publication Company, of Philadelphia, at 40 cents a copy, or $4.50 a year each.

The November-December number of CHRISTIAN THOUGHT has a paper by the new Vice-Chancellor of the University of New York on "Kant and Lotze," showing the progress of philosophical ideas during the century. Dr. John B. Drury's paper is on the "Relation of Truth and Time." It will attract attention. "Christian Socialism," and "The Family in the History of Christianity," are worth perusal also. William B. Ketcham, Publisher.

The January number of LIPPINCOTT'S MONTHLY MAGAZINE appears, as was promised, in a new and handsome cover, and large clear type. Among the most notable are an article on Civil Service Reform, by Gail Hamilton, and a collection of criticisms, by George Eliot, upon Dickens, Carlyle, Kingsley, Browning, and others of her great contemporaries. A serial story entitled "Taken by Siege," shows up a good deal of New York life. Scientific and literary bits add much to the interest of the reader. We congratulate the publishers on the change.

THE JOURNAL OF RECONSTRUCTIVES. A new Candidate for public favor, treats of dietetics and alimentation semi-technically, and is an advance in the average medical magazine. W. T. Wood, Editor: New York.

CURRENT EXCHANGES RECEIVED.

THE KEYNOTE, Music, Drama, etc, New York; The Chemical Review, Chicago; The Dental Cosmos, J. W. White, M. D., D.D.S., New York; Frank Leslie's Popular Monthly, New York; Musical Journal, Thomas Brothers, Albany, N. Y.; The Critic, J. L. & J. B. Gilder, New York; Building, a Journal of Architecture, New York; Le Progrès Medical, Paris, France; Scientific American, Munn & Co., New York; Youth's Companion, Perry Mason & Co., Boston; The Day Star, A. Delmont Jones, New York; The Illustrated Catholic American, New York; The Christian at Work, J. N. Hallock, New York; The American Inventor, J. S. Zerbe, Cincinnati; Rural New Yorker, New York; The Independent, New York; The Christian Advocate, Phillips & Hunt, New York; The Country Gentleman, Luther Tucker & Son, Albany, N. Y.; New York Tribune—weekly and daily; The Western Rural, Milton George, Chicago; The Medical Brief, J. J. Lawrence, M. D., St. Louis, Mo.; Cook's Excursionist, London and New York; American Medical Journal, George C. Pitzer, M. D., St. Louis; The St. Louis Photographer, Mrs. Fitzgibbon Clark, St. Louis, Mo.; The Church, A. A. Marple, Philadelphia; Am. Missionary Review, Independent and active, R. Wilder, Princeton, N. J.